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**A STUDY OF APPLICATION RATES OF
AEROSOL AND PUMP HAIR SPRAYS**

American Research and Testing Inc.
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A STUDY OF APPLICATION RATES OF AEROSOL AND PUMP HAIR SPRAYS

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Abstract

PROC emissions from hair spray usage in the state of California have been estimated earlier by the Air Resources Board to be about 22 tons per day.

The current study determines application rates of three hair spray dispensing systems, aerosol, pump, and Exxel packaging through a six week user panel of approximately 300 people. In addition, PROC application rates are determined through chemical analysis of the products. The user panel was stratified on the basis of sex, dispenser (pump/aerosol), and age (adult/teen).

Weighted application rates and weighted PROC application rates, in grams per application, are given below. The number in parentheses in each case is the standard deviation:

	Application Rate	PROC App. Rate	Sample Size
Female Adult Aerosol	5.2 (4.1)	5.0 (4.0)	156
Female Teen Aerosol	4.2 (4.0)	4.0 (3.9)	23
Female Adult Pump	3.8 (3.1)	3.4 (2.8)	153
Female Teen Pump	3.3 (2.9)	3.0 (2.5)	23
Female Adult Exxel	3.7 (2.5)	3.6 (2.4)	147
Female Teen Exxel	4.1 (3.9)	4.0 (3.8)	20
Male Adult Aerosol	5.6 (4.8)	5.5 (4.6)	57
Male Teen Aerosol	5.2 (4.3)	5.0 (4.2)	11
Male Adult Pump	5.6 (4.2)	2.7 (1.8)	57
Male Teen Pump	5.0 (4.7)	4.4 (4.2)	12
Male Adult Exxel	3.3 (2.0)	3.2 (1.9)	54
Male Teen Exxel	4.3 (2.7)	4.2 (2.6)	11

A Mann-Whitney evaluation was made to evaluate differences between data sets. Product usage data for both male and female adult groups support the conclusion that increased use of either pumps or Exxel packaging for hair spray would reduce PROC emissions in California. Data from male and female teen groups do not support these conclusions. The data for the teen groups are very limited. Data from adult groups also indicate that use of Exxel packaging in place of pumps would not reduce PROC.

With respect to consumer preference, pump users were not very willing to switch to aerosols, but on the order of half of aerosol users were willing to switch to pumps.

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We appreciate the cooperation of Clairol in providing samples of Patterns as well as samples of its other products for the user panel. We particularly acknowledge the cooperation of Mr. Joseph Pereira of Clairol.

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SUMMARY

The California Air Resources Board estimates that 22 tons of photochemically reactive organic compounds (PROC) are released into the environment in California every day because of the use of aerosol hair sprays. Because nonaerosol hair sprays contain less PROC, it has been suggested that a potential method for reducing emissions from hair spray usage would be to switch from aerosol to nonaerosol product forms.

There were three aspects to the current study. The first was a market research study which looked at the composition of the hair spray user population. This was carried out so as to aid in the proper structuring of a user panel. The panel constituted the second aspect of the study. The market research data were supplied by Packaged Facts, Inc. of New York.

A user panel of approximately 320 frequent hair spray users (three or more times a week) was recruited by telephone. The panel was stratified by sex, age (adult or teen), product form (aerosol/pump), and brand category. This aspect of the study was spread over a period of six weeks. For the first two weeks, the panelist used his/her usual product form and brand. In the second two weeks, the usual product was used in its alternate form, and in the last two weeks Patterns, a product which is neither an aerosol nor a pump was used. Panelists completed questionnaires regarding consumer preference after each two weeks. All products used were weighed before and after usage. In addition the panelists kept a diary of their product usage so that the product application rate and subsequently the PROC application rate could be calculated.

Thirdly, chemical analysis of the products used was carried out in the laboratory so that the PROC application rate could be calculated from the application rate. Aerosol product was sprayed out for a period of thirty seconds into a tared plastic bag and oven dried to determine total PROC. This was determined in triplicate.

Initially, users of only the top three hair spray brands were to be included in the user panel. However, the market research data indicated that the market is quite fragmented in terms of market share. Therefore, the plan changed to include users of any and all brands.

It was the original plan to actually identify the PROC

qualitatively. However, since the number of products for analysis changed from three to approximately ninety, this plan was aborted. The PROC was qualitatively identified for some products through the use of gas chromatography using a flame ionization detector. Since some hair spray pumps were labeled indicating that they contained water, a water determination was made for these. The volatile content was then corrected for water content thus correcting the PROC content.

RESULTS

The most startling revelation of the market research study was the fragmented nature of the hair spray user population. As indicated above, the original intent was to structure a user panel of users of the top three brands. However, the largest brand share of users among any group (i.e. female, male, adult, teen) was only 14.0%. As a result all of the hair spray brands were put into one of four categories, defined generally on the basis of volatile delivery rate and users were recruited for these categories.

Concerning the user panel, of the 320 who began the study, 234 completed all three questionnaires and 248 completed the usage of all three products.

Weighted application rates and PROC application rates for the various subgroups were determined to be as follows. Each parameter, given in grams per application, is followed by its standard deviation in parentheses.

	Application Rate	PROC App. Rate	Sample Size
Female Adult Aerosol	5.2 (4.1)	5.0 (4.0)	156
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A Mann-Whitney evaluation to determine whether differences in application rates between aerosol and pump, aerosol and Exxel, and pump and Exxel were significant indicated that among the adult groups the rate differences were real for aerosol and pump and aerosol and Exxel. Only the PROC differences were significant between pump and Exxel for these groups. Comparison between comparable data sets for the teen groups did not show differences.

The data indicate that a switch from aerosol to pump or from aerosol to Exxel would decrease PROC emissions, at least with respect to adult users.

Regarding consumer satisfaction, the particularly liked attributes were hold, nature of the scent, and the fact that the hair was not left sticky, but not stiff either. As far as the willingness of hair spray users to change product form, adult pump users were not very willing to switch to aerosols, but on the order of half of aerosol users indicated a willingness to switch to pumps.

There were some categories where either Patterns or the alternate product was perceived to be superior, but generally not in the categories considered most important by panelists.

Regarding overall product preference, approximately one half of the female aerosol users ranked Patterns better than their own current brand.

In all of the panel groups with the exception of male teen pump users, there was a clear preference for the Exxel dispenser.

Background

The state of California has been attempting to improve its air quality and has made significant strides toward that goal in recent years in certain well defined areas of chemical contaminants.

The California Air Resources Board has been designated the responsible agency within the state for evaluating the feasibility of reducing emissions of photochemically reactive organic compounds (PROC) from the use of consumer products. Statewide PROC emissions from hair spray usage are estimated by the Air Resources Board to be about 22 tons per day. Compounds which are considered PROC are generally found as solvent or propellant in hair spray products.

In order to validly evaluate PROC emissions within the state because of the use of hair sprays, this study has been undertaken. The object of the study has been to obtain reliable information on application rates of selected aerosol, pump, and Exxel hair spray products. The Exxel dispenser is neither an aerosol nor a pump. At the same time, consumer preference regarding the different delivery forms has been evaluated to assist the Air Resources Board.

Previous to this study, the only source of data known to the Air Resources Board has been a study cited by Johnsen (Aerosol Handbook, 1982). Usage rates so cited indicated that women in England and the United States using an aerosol hair spray release 7.5 ± 2.5 g per application. Domestically, women pump users are indicated as using 3.2 ± 0.9 g per application and men use them at 4.0 ± 0.9 g per application. Data were cited for men's usage of aerosol hair sprays, but no data were given for men's usage of pumps. Since these data represent the market approximately ten years ago, their validity today may be questionable. In addition, these data were collected in a market which still used chlorofluorocarbon propellants so that the nature of the products is also different today.

Methodology

The project included three phases as follows:

1. Market Research
2. Consumer Panel
3. Chemical Analysis

1. Market Research

In order to allow the proper structuring of the consumer panel in phase 2, some information regarding the nature of the hair spray user population had to be obtained. The market research data included the following:

1. Brand shares
2. Dispenser type (percent aerosol/pump users)
3. Usage stratified by sex and age
male/female; adult/teen)
4. Usage frequency
5. Pertinent demographics of the user
population

The market research data were supplied by Packaged Facts, Inc., 274 Madison Avenue, New York, N.Y. 10016. Their sources were syndicated market research services, which approach was acceptable to the Air Resources Board. This approach was carried out in lieu of a literature search since generally the kind of data required are not usually available through a literature search. Packaged Facts, Inc. had previously published several reports on the hair care industry and were selected for this reason.

Data are given for four categories of users: adult women, female teens, adult men, and male teens. Data for adult women and men were adapted by Packaged Facts from MRI data from 1986. Data for female and male teens were adapted from Simmons data from 1984.

Of particular use in this study are the demographics of the user groups and the market shares of the individual hair sprays. The market shares are given for each product as a whole without regard to the breakdown between aerosol and pump if the product is sold in both forms. In addition, although hair spray products are sold in a variety of "holds", the market research data did not break out market shares with respect to this parameter.

Since the market shares are so fragmented, the work statement was changed at a meeting of the Contractor with the Air Resources Board in September, 1986. The initial proposal was to include users of the top three hair spray brands in the user panel, assuming this would include a clear majority of the market. However, given the fragmented market shares, it was agreed by both parties that the hair spray brands would be divided into four groups according to the volatile delivery rate of the products. Panelists would be recruited to be

representative of these four categories according to the sum of the market shares for that particular group. In essence the user groups were weighted to be representative of these groups. The details of this categorization are included in the next section.

Finally, in the market share lists supplied by Packaged Facts, toward the bottom of each there generally were a number of lesser brands grouped together as "other". The individual brand shares were not given for these; however, as a group their contribution is significant. We could not distribute these over the four groups since we did not know the individual brand shares. We, therefore, included all of them in the fourth group since we did know the total market share.

Also it should be noted that the market shares reported by Packaged Facts, and typically reported as such, do not include sales through beauty salons. This traditionally may not make much difference, but in this case we found considerable sales occurring through this channel by such companies as Sebastian International, Inc. This company is based in southern California. A number of panelists recruited by telephone were users of this brand. When we talked to proprietors of these beauty salons, they indicated brisk sales of these products. They were included in this study in the group identified as "others".

2. Panel Usage

Approximately 320 hair spray users were recruited by telephone by Babcock, Frank and Associates of Santa Monica to participate in the study. To be eligible, potential panelists had to be a frequent user, which was defined as someone who regularly used hair spray three or more times a week. BFA attempted to recruit panelists according to the group identification mentioned above.

These groups were established on the basis of solvent/propellant delivery rate determined in the laboratory. Determination of solvent/propellant delivery rate is detailed below.

For aerosols, the four categories were established as follows:

- a less than 30 g/minute
- b 30-40 g/minute
- c greater than 40 g/minute

d brands in the market research data
as "other"

The philosophical basis for this categorization was that for the aims of the Air Resources Board, users of two brands which dispense PROC into the air at the same rate may be considered the same.

This categorization was made for each of the four groups of panel participants. It had to be carried out separately for each group since brand shares differed for each group. For pumps, the groups were identified as e through h. Group h was similar to group d of the aerosols, as it contained those brands identified as "other" in the market research. The remaining brands were categorized on the basis of solvent delivery rate as before.

First, the market shares for each group, as indicated in the market research data, were corrected and renormalized. For example, when market shares were being considered for adult female pump users, Aqua-Net, Miss Breck, and All-Set were excluded and the market shares remaining renormalized. The reason for this was that these brands were not then being sold as pumps. The market shares listed are the aerosol market shares for these brands. Faberge is only recently selling Aqua-Net pumps. Shulton indicated to us that they have discontinued the sale of Miss Breck pump although we did find a few on a shelf in one store. All-Set was not found as a pump. No correction was applied to brand shares where the product is sold both as a pump and as an aerosol since we did not have the data on how the brand share was distributed between the two. Not to apply a correction factor is to assume that all are distributed as the aerosol/pump overall market is distributed.

To indicate how the weighting was carried out, the following example is taken from the female adult aerosol data:

a		b		c		d
Adorn(0)	3.5	MinkDiff(14)	4.8	Aqua-Net(14)	12.8	Atune(1)
Finesse(6)	3.9	Sassoon(15)	1.7	Rave(5)	5.1	Pantene(8)
Flexnet(7)	2.3	Style(3)	5.0			Sebastian(22)
Jhirmack(8)	2.6	VO5(8)	4.7			TCB(3)
All Set(6)	2.7	Breck(8)	11.3			Final Net(13)
Silkience(6)	2.1					LaCoupe(1)
White Rain(4)	7.1					Nexus(3)

The groups are identified as a, b, c, and d. The number in parentheses following each brand name is the number

of panelists in the sample using that brand. The number following the parentheses is the corrected and renormalized brand share. Adding the brand shares in group a, the panelists in group a should represent 22.1% of the market. Adding the numbers in parentheses and dividing by 156, they actually are 19.9% of the market. Dividing 22.1 by 19.9, the weighting factor is 1.11. Doing similar computations for the other groups the weighting factors for groups b, c, and d are 0.84, 1.48, and 0.93 respectively. Only the total brand share for group d was known. That is to say, in the market research data, 30.4% of the hair spray users were users of brands designated as "other". These weighting factors were used to weight both the application rate and the PROC rate. The method of determining solvent/propellant delivery rates is described below.

Weighting factors for all other groups are listed below:

	a/e*	b/f	c/g	d/h
Female Adult Aerosol	1.11	0.84	1.48	0.93
Female Adult Pump	0.82	0.81	2.04	1.24
Male Adult Aerosol	1.02	0.92	1.02	1.02
Male Adult Pump	0.69	0.86	1.94	1.59
Female Teen Aerosol	1.17	0.91	0.57	1.40
Female Teen Pump	0.52	0.88	1.07	1.93
Male Teen Aerosol	2.40	2.98	0.28	0.98
Male Teen Pump	1.83	0.50	0.50	2.10

* a, b, c, d = aerosol groups; e, f, g, h = pump groups

The study was conducted for a period of six weeks. The panelist's usual brand and form, aerosol or pump, was supplied to the panelist for the first two weeks. The product was weighed before giving it to the panelist and after receiving it back from the panelist. All weighings were conducted in the laboratory on a Model 2251S0400 Top-Loading Balance.

The panelist was asked to keep a diary of when he/she used the product so that the product application rate could be calculated on return of the product. The panelist was also directed to be the only one in the household to use the product and to use only this product during the course of the test. At the conclusion of the two weeks the product was returned and the panelist completed a questionnaire wherein he/she indicated product preference, etc.

This same procedure was followed during the second two weeks except that the panelist was given his/her own product in the alternate form where available. If the

product was not available in the alternate form, the panelist was given a choice of what product to use in the second phase. The only restriction was that it had to be in the alternate form. It was found that Aqua Net was about to be marketed in this geographical area as a pump (as well as an aerosol). This being the case, both forms were included in the study.

Finally, in the third two weeks, the panelists all used Patterns, a Clairol product, currently being sold in Exxel packaging, a dispenser provided by Container Industries, Inc., Somerset, N.J. This dispenser is neither an aerosol nor a pump. It provides a continuous spray and so behaves like an aerosol, but contains no propellant.

A copy of the complete questionnaire is included as Appendix D.

3. Chemical Analysis

The scope of the chemical analysis was limited due to the fact that the number of brands requiring analysis changed from three to ninety. In order to determine volatile PROC content, each aerosol was weighed and sprayed out for a period of 30 seconds into a weighed plastic bag. The aerosol was then reweighed, and the bag was heated to dryness and weighed. The percent volatiles was calculated. This procedure was run in triplicate. The same procedure was used for Patterns.

A similar procedure was run for pumps except that one hundred depressions of the plunger were used instead of 30 seconds.

The delivery rates used to group the products were determined by taking the difference between the product weights before and after delivery, dividing by the delivery time, and multiplying by the PROC content. Delivery rates were determined in triplicate. Delivery rates for aerosols were measured only after the initial high pressure of the aerosol had dissipated.

The application rates for the products used by the panelists were determined by weighing the dispensers before and after usage by the panelists. The amount of product used, calculated by subtraction of the dispenser weights, was divided by the number of applications reported by the panelist. The PROC rate was determined by multiplying the application rate by the PROC content expressed as a percent.

All samples which indicated the presence of water on their labels had the water content determined by the method outlined in Quantitative Chemical Analysis (2nd edition, Ayres, Harper & Row, NY, 1968, p 206). In this method, water is reacted with calcium carbide to produce acetylene. The volume of the acetylene produced is measured by the method outlined in Quantitative Chemistry, A Laboratory Text, (Waser, W.A. Benjamin Inc, NY, 1966, pp 118-119). The density of each sample was determined using a calibrated pycnometer, so the weight of a known volume of sample could be calculated. A 50 ml burette was attached to a crucible funnel with a tube. The apparatus was filled with water and configured as a U-tube, with the water levels at equal heights. One hundred to two hundred microliters of sample were pipetted into a 10 ml syringe containing excess calcium carbide. The syringe was quickly attached to tubing connected to the top of the burette. The acetylene evolved was measured by reading the position of the water level in the buret after 1 hour. This method was calibrated by measuring the gas evolved from known concentrations of water in isopropanol. Finally, weight percent water in each sample was calculated. Percent volatile of each product was corrected to percent volatile PROC by subtracting the percent of water present.

The propellant was sampled from each aerosol by means of an Alltech Associates self-sealing can piercing apparatus (catalog # 8013) and a Precision Sampling Pressure-Lok Series A 100 ul gas tight syringe. The propellant sample was analyzed by flame-ionization gas chromatography using a Shimadzu GC-9A Gas Chromatograph under the following conditions:

Oven: 30°C, 5 minutes isothermal
ramp to 60°C, 2.5°C/minute, hold 20 min
Column: Gas Chrom C8, 13' SS, 1/8" ID
Injection Port and Detector: 100°C
Carrier: Nitrogen @ 2.75psi (~ 10 ml/min)

The resulting chromatograms were processed with a Shimadzu Chromatopac C-R3A Integrating Recorder, and were compared to those of standard C₂-C₆ hydrocarbons for identification. This aspect of analysis was terminated after analyzing 25 of 90 possible brands of hair spray when it was determined that total PROC determination would suffice.

It had been suggested that the average volatile delivery rate for each group be applied to each product in the group. We did not do this because as explained

previously, group four products were in that group simply because they were part of the market share listing as "other". There was no requirement for that group that they have similar solvent/propellant delivery rates.

RESULTS

1. Market Research

All market research data are presented in Appendix C.

The most significant fact brought out by the market research is that the hair spray market is extremely fragmented. The highest brand share for any hair spray given is 14.0% (female teens, Aqua Net).

Of the four categories reported (female adult, female teen, male adult, male teen), the usage proportion between aerosol and pump is approximately two thirds/one third aerosol/pump for all groups except male teen users, approximately 40% of whom use pumps.

A user index was calculated for a number of user subgroups within a given category. For example, female adult hair spray users were stratified by age into six categories (e.g. 18-24 years old, 25-34, etc.). The percent of female adult hair spray users for a one week period was calculated in each age category. This percent was divided by the percent of users for the entire category, female adult hair spray users, and multiplied by 100. This means that any subgroup which used hair spray more than the category as a whole will have an index greater than 100. Generally, there is very little deviation of any index from 100. Packaged Facts indicated that one should regard any deviation of an index from 100 as significant if that index is greater than 120 or less than 80. This is to be regarded as a "rule of thumb". This is to say that within a particular group, such as female hair spray users, there is no particular increased or decreased use among particular employment groups, income groups, large or small counties, married/single groups, etc. Exceptions to this among female adult hair spray users are groups such as women who have children in the home under 2 years of age, and black women, both of whom are said to use hair spray less than the female population at large, at least as measured in this market research study. Similar observations can be made for the other test groups. No data are included here regarding the amounts of hair spray used, although usage as evaluated

through frequency is included.

Since the market research is generally used to establish who the users of a product are with a view to targeting advertising, data other than frequency are generally absent. For example, one might expect there to be a correlation between usage rate and length of hair, but the market research does not address the issue.

However, in this study the major contributions of the market research have been to identify the user population as to brand usage.

2. Panel Usage

The number of people who completed the study in each sampling group is as follows:

	Questionnaire	Usage
Female Adult Aerosol	78	84
Pump	69	70
Female Teen Aerosol	16	17
Pump	6	7
Male Adult Aerosol	27	29
Pump	27	29
Male Teen Aerosol	8	8
Pump	3	4
Total:	234	248

The first column indicates those who completed all three questionnaires. The second column includes all those who returned the products in question. There are some slight disparities, since someone on occasion returned a product without filling out a questionnaire, etc.

The original estimate by the Air Resources Board was that it would take 134 aerosol users and 75 pump users to complete the study. This is to say, it would take these numbers to generate the usage data previously cited by Johnsen (Aerosol Handbook, 1982) with the same standard deviations. This number failed to include the number of male pump users since Johnsen had not cited data for this group.

We had agreed to recruit 300 panelists. In fact, we recruited approximately 320. If Johnsen's data were correct, required sampling numbers, by our calculations using Student's t to calculate sample size, would have been as follows. These used the formula requiring a 95% confidence level with a length not exceeding 6% of the mean.

	Johnsen	Actual
Female Aerosol	119	101
Female Pump	51	77
Male Aerosol	54	37
Male Pump	--	33

For the sake of comparison, adult and teen groups have been combined above since Johnsen's citation does not stratify by age. The problem with evaluating against the data cited by Johnsen is that Johnsen's sampling numbers and methods are not known. Actual numbers of participants differ from those calculated from the data cited by Johnsen because of attrition of participants, etc.

Product usage values are summarized below and are given in full in Tables 1 through 12. The number in parentheses in each case is the standard deviation of the parameter measured. Current application rates given are the weighted rates:

	Grams/application	
	Current	Johnsen
Female Aerosol	----	7.5 (2.5)
Adult Aerosol	5.2 (4.1)	
Teen Aerosol	4.2 (4.0)	
Female Pump	----	3.2 (0.7)
Adult Pump	3.8 (3.1)	
Teen Pump	3.3 (2.9)	
Male Aerosol	----	4.0 (0.9)
Adult Aerosol	5.6 (4.8)	----
Teen Aerosol	5.2 (4.3)	
Male Pump		----
Adult Pump	5.6 (4.2)	
Teen Pump	5.0 (4.7)	

In general, usage rates are similar except for the female aerosol group. The fact that the studies were run at different times is probably quite significant since styles have a profound influence on usage. Standard deviations in this study are substantially larger than those in the study cited by Johnsen. It is difficult to comment on the differences since we have no information on the latter study.

Tables 1 through 12 (Appendix A) include the name, form, and hold of the product used, the amount of product used over the test period, the number of applications, application rate (grams/application), the user number, limited demographics identified at the end of each table

(aerosol/pump user, length of hair, etc.), the volatile percent determined in the laboratory, the PROC application rate, the weighted application rate, and the weighted PROC application rate.

Application rates and PROC application rates for the various subgroups were determined to be as follows. Both application rates given are weighted except for those of the Exxel product. Each parameter, given in grams per application, is followed by its standard deviation in parentheses.

	Application Rate	PROC App. Rate	Sample Size
Female Adult Aerosol	5.2 (4.1)	5.0 (4.0)	156
Female Teen Aerosol	4.2 (4.0)	4.0 (3.9)	23
Female Adult Pump	3.8 (3.1)	3.4 (2.8)	153
Female Teen Pump	3.3 (2.9)	3.0 (2.5)	23
Female Adult Exxel	3.7 (2.5)	3.6 (2.4)	147
Female Teen Exxel	4.1 (3.9)	4.0 (3.8)	20
Male Adult Aerosol	5.6 (4.8)	5.5 (4.6)	57
Male Teen Aerosol	5.2 (4.3)	5.0 (4.2)	11
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Male Adult Exxel	3.3 (2.0)	3.2 (1.9)	54
Male Teen Exxel	4.3 (2.7)	4.2 (2.6)	11

The Mann-Whitney test was carried out to statistically evaluate differences between aerosol and pump, aerosol and Exxel, and pump and Exxel application rates. Earlier mention was made of primary versus secondary users. The usage tables contain data for those who normally use that product form and for those who are using that product form as a second product form for the test (secondary). To evaluate whether primary and secondary users of each product form use each product differently, first the Mann-Whitney test was carried out on the weighted rate for primary versus secondary users in each pump and aerosol data set. The results are given in Table 13. This was done to be sure that including both primary and secondary users in a data set was valid.

The evaluation indicates that indeed the data for primary and secondary users in each pump and aerosol data set are the same. This being the case primary and secondary users were both included for further comparisons.

In Table 14 evaluations are made between aerosol and pump rates, aerosol and Exxel rates, and pump and Exxel rates. There are two lines of data for each comparison.

The first evaluates the application rates and the second evaluates the PROC application rates. All rates compared are weighted except those for Exxel.

Through this evaluation the following rates are found to be different:

1. Female Adult - Aerosol and Pump - rate and PROC rate
Aerosol and Exxel- rate and PROC rate
Pump and Exxel - PROC rate
2. Male Adult - Aerosol and Pump - rate and PROC rate
Aerosol and Exxel- rate and PROC rate
Pump and Exxel - PROC rate

Rates for female and male teen groups for the same comparisons were not found to be different.

According to data on the adult groups, use of pumps or Exxel packaging in place of aerosols would significantly reduce PROC. According to the same data use of Exxel packaging in place of pumps would not reduce PROC. Data from teen groups do not support these conclusions.

Demographics - The demographics of the panelists are contained in Appendix B with the questionnaire responses. Relative to the entire population or to the population of hair spray users, the most notable aspect of the demographics is the fact that in almost all of the adult groups, the panelists are predominantly single rather than married:

	Single(%)	Married(%)	Other(%)
Female Aerosol	64.9	27.5	7.6
Pump	67.2	25.6	7.2
Male Aerosol	41.5	58.5	0.0
Pump	75.6	11.3	13.1

This is probably due to several reasons. First, the west side of Los Angeles, from which geographic area the recruiting was carried out, is generally regarded as an attractive place for singles to live so that the population from which the panelists were drawn is higher in singles than the general population. In addition, just as women with very young children in the home use less hair spray than the norm, presumably because of a lack of time, single people may be more willing and able to participate in a study such as this.

Regarding age, there is some skewing to the younger age categories. Below is a comparison of age in the current study with the market research data reported in Appendix C. The comparison includes only the older categories:

Age	Female			Male		
	Current		MR	Current		MR
	A*	P**		A	P	
45-54	8.7	13.9	13.2	13.9	13.1	16.7
>55	15.0	3.3	32.4	14.6	4.0	27.1

* Aerosol, ** Pump

A significant difference is actually only evident in the >55 category. It would have been difficult to adequately sample this category given the sampling methods.

Finally, it would appear that we have something of a "yuppie" sample. This is not altogether unexpected given the geographic sampling area. For example, education levels are as follows for the adult groups:

	Female(%)			Male(%)		
	Current		MR	Current		MR
	A*	P**		A	P	
College Grad. or more	35.0	42.5	13.1	63.2	67.8	17.4

* Aerosol, ** Pump

Weighting factors have been applied to match the composition of the sample with the brand share categories, but since the original market research data did not break out demographics with respect to brand share, no further weighting was attempted.

Considering the user index concept presented by Packaged Facts, which examines hair spray usage with respect to strata of the hair spray population and applying the "rule of thumb" that a user index is significant only if it deviates from 100 by more than 20, it would appear that hair spray usage is not significantly different among different age groups, groups with different education levels, or married vs. single groups. Applications rates may differ among age groups, for example, because of different hair styles, but there appears to be no information readily available which would allow us to weight the data for this.

Preference Evaluation - The questionnaire responses are found in Appendix B. All percents given are based on the number who answered the question.

When results are given in W%, it means that the result is a weighted percent of the respondents to the question. The weights are as indicated previously. Occasionally, where the panelist is given a number of

choices, at the end of the list of choices there is indicated the word "other", meaning that if the panelist has another reason for liking or disliking the product he/she should indicate it as "other". Sometimes the number of respondents indicating "other" is high, but the responses are generally not clustered in this category.

Regarding brand loyalty, the other side of which is one's willingness to change products, in each of the panel categories, over 35% of the group had been using the brand for less than a year:

	Female(%)				Male(%)			
	Aerosol		Pump		Aerosol		Pump	
	A*	T**	A	T	A	T	A	T
<one year	45.3	61.9	37.6	38.1	35.7	92.6	46.9	100.0
1-4 years	44.2	38.1	60.0	61.9	39.4	3.7	43.1	0.0

* Adult, ** Teen

The particularly liked product attributes were hold, nature of the scent, and the fact that the hair was not left sticky, but not stiff either (leaves hair soft):

	Female(%)				Male(%)			
	Aerosol		Pump		Aerosol		Pump	
	Adult	Teen	Adult	Teen	Adult	Teen	Adult	Teen
Hold	60.0	55.9	64.6	74.1	47.3	57.1	81.4	100.0
Scent	22.1	42.8	25.5	11.5	13.9	34.0	32.8	15.1
Not too sticky	28.1	32.9	21.0	25.9	17.1	30.5	15.1	55.3
Leaves hair soft	10.1	25.7	7.7	37.4	25.1	0.0	17.6	29.6

A perceived failure in any one of these categories is generally given as a dislike about one's brand of hair spray. When the question is expanded to include reasons for purchase, hold predominates as a reason along, to a lesser extent, with the other attributes given above. Cost also is frequently given as a reason for purchase.

The panelist was asked, if his/her present brand was not on the market, which brand would he or she use. In addition, the form of the product (aerosol/pump) was indicated. The results could be of particular interest to the Air Resources Board. Results are as follows:

	Female(%)				Male(%)			
	Aerosol		Pump		Aerosol		Pump	
	Adult	Teen	Adult	Teen	Adult	Teen	Adult	Teen
p to p*	---	---	79.8	59.3	---	---	84.6	100.0
p to a	---	---	20.2	40.7	---	---	15.4	0.0
a to a	50.2	57.4	---	---	46.6	53.6	---	---
a to p	49.8	42.6	---	---	50.4	46.4	---	---

* a = aerosol, p = pump

It would appear that adult pump users are not very willing to switch to aerosols, but on the order of half of aerosol users are willing to switch to pumps. Male teen pump users appear very committed to the use of pumps.

Questions 8, 14, and 17 call for a performance evaluation of current product, alternate form of current product, and Patterns. Only the ratings excellent and very good are considered in Table 23. First, the percents of the sample giving either of these two evaluations were added for each product in each sampling group. Then that percent for the alternate product and that for Patterns was divided in each case by the percent for the current product. This index is given in Table 23. This means that every time the index exceeds one for an attribute, the panelist perceives that product, be it the alternate or Patterns, as being better than his/her current product.

Generally, there are some categories where either the alternate product or Patterns is perceived to be superior, but generally not in the categories considered most important by panelists. For example, hold earlier was rated as being very important, but of the adult groups, only the male aerosol users gave Patterns an excellent or very good rating. None of the adult groups gave the alternate form of their current product such a rating. For the sake of comparison attributes 1, 12, 14, and 16 in Table 23 are holding power, feels natural, fragrance, and leaves no sticky residue respectively.

Regarding overall product preference, female aerosol users ranked Patterns better than their own current brand. The male aerosol users did not rank Patterns as high. However, it should be noted that Patterns is positioned for females. For example, it has pink packaging. In the female aerosol groups, Patterns ranked above the alternate form of the panelist's product. Reasons for dislike are given in the tables. It is interesting to note that although hair spray users consider scent important, but not extraordinarily so, as

a reason for choice of their current product, dislike of the fragrance is a very important reason for dislike of the product.

Product Preference(%)

	Female Aerosol		Female Pump		Male Aerosol		Male Pump	
	A*	T**	A	T	A	T	A	T
My brand	32.4	15.8	52.7	61.9	45.6	50.0	50.1	84.9
Alternate	17.7	24.6	17.2	17.5	21.4	3.6	20.2	15.1
Patterns	49.9	59.6	30.1	20.6	33.0	46.4	29.6	0.0

* A = Adult, ** T = Teen

Dispenser preference is summarized below:

Dispenser Preference(%)

	Female Aerosol		Female Pump		Male Aerosol		Male Pump	
	A*	T**	A	T	A	T	A	T
Pump	8.4	19.2	18.0	49.0	18.3	3.6	36.1	100.0
Aerosol	23.6	4.0	12.7	0.0	19.4	34.0	5.6	0.0
Patterns	68.1	76.8	69.2	51.0	62.3	62.4	58.4	0.0

* A = Adult, ** T = Teen

In all of the panel groups with the exception of male teen pump users, there was a clear preference for the Exxel dispenser.

It would appear that the Exxel dispenser is quite acceptable. Some further product development regarding hold and scent may have to be pursued if more general product acceptability were to be desired.

3. Chemical Analysis

Data appearing in the last four columns of the Tables 1 through 12 reflect chemical analysis. The vol % is the percent volatiles for the product. The PROC rate is the product of the product application rate given in column four and the percent volatiles given in column seven. Finally both the product delivery rate and the proc delivery rate are weighted according to the group to which the particular product was assigned. In addition, the PROC content for all aerosols and pumps tested is indicated in Tables 24 and 25. The PROC content for Patterns is 97.5%.

CONCLUSIONS

Product usage data for both male and female adult groups support the conclusion that increased use of either pumps or Exxel packaging for hair spray would reduce PROC emissions in California. Data from male and female teen groups do not support these conclusions. The data for the teen groups are very limited. Data from adult groups also indicate that use of Exxel packaging in place of pumps would not reduce PROC.

An interesting fact was observed. Sebastian Shpritz Pump and several pumps generally positioned for black people contained no PROC. The solvent system in these products is water. This is not to say that the solution to this problem is this type of product. A water based pump appears to function quite differently than those pumps to which we are accustomed. However, the development of products which have reduced PROC should certainly be considered.

The Exxel dispenser was received quite favorably. This dispenser has the distinct advantage of not requiring propellant.

Consumer reaction appears fairly well defined. Approximately fifty percent of aerosol users indicate a willingness to change to pumps. Consumers have indicated what product attributes they consider important and, therefore, what attributes must be retained.

The statements and conclusions in this report are those of the Contractor and not necessarily those of the State Air Resources Board. The mention of commercial products, their source or their use in connection with material reported herein is not to be construed as actual or implied endorsement of such products.

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GLOSSARY

A	Aerosol
al	Aerosol is user's first choice
AP	All purpose
CT	Comb thru
Exxel packaging	Packaging for Patterns; developed and sold by Container Industries, Inc., Somerset, N.J.
f	Female adult
F	Firm hold
Fix pl	Fixatif plus
FS	Freeze and shine
ft	Female teen
GR	For grey hair
H	Hard to hold
m	Male adult
Max	Maximum hold
Maxi\HP	Maximum holding power
mt	Male teen
N	Natural hold
OrigHold	Original hold
P	Pump
Patterns	Hair spray sold by Clairol; sold in packaging which is neither aerosol nor pump
PERM	For permanented hair
pl	Pump is user's first choice
PROC	Photochemically reactive organic compounds
R	Regular hold
REIN	Reinforcer
S	Super hold
SCU	Sculpting spray
SFT	Soft hold
s, m, l	Short, medium, or long hair
U	Ultra hold
User No.	Arbitrary number assigned to each user
X	Extra hold
XD	Extra dry
XF	Extra firm hold
XS	Extra super hold

APPENDIX A. PRODUCT USAGE DATA

TABLE 1. PRODUCT USAGE DATA
FEMALE ADULT AEROSOL USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	PROC VOL %	PROC RATE g/app	WGHT RATE g/app	WGHT PROC RATE g/app
AllSet DNF/XF/A	256.0	11	23.3	19f alma	98.1	22.9	25.2	24.7
AllSet/F/A	61.5	28	2.2	74f alma	98.1	2.2	2.4	2.3
AllSet/F/A	180.2	45	4.0	249f alla	98.1	3.9	4.3	4.2
AllSet/MAX/A	86.4	25	3.5	73f alsa	95.4	3.3	3.8	3.6
AllSet/X/A	7.8	06	1.3	161f alla	97.5	1.3	1.4	1.4
AllSet/X/A	73.8	14	5.3	66f alla	97.5	5.2	5.7	5.6
AquaNet/AP/A	30.0	17	1.8	179f almc	98.0	1.8	2.7	2.6
AquaNet/AP/A	62.8	17	3.7	261f alscl	98.0	3.6	5.5	5.4
AquaNet/AP/A	103.7	24	4.3	79f almc	98.0	4.2	6.4	6.2
AquaNet/AP/A	145.9	16	9.1	81f almc	98.0	8.9	13.5	13.2
AquaNet/AP/A	153.7	46	3.3	76f almc	98.0	3.2	4.9	4.8
AquaNet/S/A	16.7	07	2.4	206f allc	97.0	2.3	3.6	3.4
AquaNet/S/A	18.2	08	2.3	218f allc	97.0	2.2	3.4	3.3
AquaNet/S/A	23.2	19	1.2	202f a mg	97.0	1.2	2.4	2.4
AquaNet/S/A	30.1	12	2.5	238f alscl	97.0	2.4	3.7	3.6
AquaNet/S/A	47.1	34	1.4	176f allc	97.0	1.4	2.1	2.0
AquaNet/S/A	106.1	14	7.6	173f almc	98.0	7.4	11.2	11.0
AquaNet/S/A	124.4	16	7.8	189f almc	97.0	7.6	11.5	11.2
AquaNet/S/A	171.3	21	8.2	283f almc	97.0	8.0	12.1	11.8
AquaNet/XS/A	85.0	13	6.5	279f alscl	94.6	6.1	9.6	9.1
Atune/PERM/A	76.7	11	7.0	174f almd	98.4	6.9	6.6	6.5
Breck/R/A	69.1	12	5.8	181f alsb	90.8	5.3	4.9	4.5
Breck/R/A	80.6	15	5.4	270f almb	90.8	4.9	4.6	4.2
Breck/R/A	193.0	17	11.4	293f almb	90.8	10.4	9.7	8.8
Breck/S/A	11.6	11	1.1	271f allb	89.2	1.0	0.9	0.8
Breck/S/A	39.4	10	3.9	209f almb	89.2	3.5	3.3	3.0
Breck/S/A	43.8	17	2.6	159f almb	89.2	2.3	2.2	2.0
Breck/S/A	49.7	23	2.2	199f almb	89.2	2.0	1.9	1.7
Breck/S/U/A	55.4	22	2.5	195f allb	89.2	2.2	2.1	1.9
FinalNet/R/A	12.1	07	1.7	148f a lg	98.1	1.7	3.5	3.4
FinalNet/R/A	33.2	07	4.7	190f a mg	98.1	4.7	9.6	9.4
FinalNet/R/A	48.0	16	3.0	202f a mg	98.1	2.9	6.1	6.0
FinalNet/R/A	51.1	12	4.3	8f a mg	98.1	4.2	8.8	8.6
FinalNet/R/A	52.4	15	3.5	108f a mg	98.1	3.4	7.1	7.0
FinalNet/R/A	52.8	05	10.6	245f a lg	98.1	10.4	21.6	21.2
FinalNet/R/A	99.3	42	2.4	200f a mg	98.1	2.4	4.9	4.8
FinalNet/R/A/U	37.8	13	2.9	145f a mg	98.1	2.8	5.9	5.8
FinalNet/R/A/U	40.1	11	3.6	109f a mg	98.1	3.5	7.3	7.2
FinalNet/R/A/U	104.6	23	4.5	105f a mg	98.1	4.4	9.2	9.0
FinalNet/R/A/U	217.2	18	12.1	164f a mg	98.1	11.9	24.7	24.2
FinalNet/U/A	27.5	08	3.4	9f a mg	95.1	3.2	6.9	6.6
FinalNet/U/A	29.6	13	2.3	68f a sb	95.1	2.2	2.0	1.9
Finesse/X/A	81.2	24	3.4	64f al a	96.7	3.3	3.7	3.6
Finesse/X/A	63.4	23	2.8	235f alma	96.7	2.7	3.0	2.9
Finesse/X/A	74.0	16	4.6	304f alma	96.7	4.4	5.0	4.8
Finesse/X/A	81.3	16	5.1	111f a mg	96.7	4.9	10.4	10.1
Finesse/X/A	89.1	17	5.2	3f a ma	96.7	5.0	5.6	5.4

TABLE 1. PRODUCT USAGE DATA (continued)
FEMALE ADULT AEROSOL USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	PROC VOL %	PROC RATE g/app	WGHT RATE g/app	WGHT PROC RATE g/app
Finesse/X/A	108.4	12	9.0	236f alsa	96.7	8.7	9.7	9.4
Flexnet/R/A	5.4	10	0.5	246f a la	94.6	0.5	0.5	0.5
Flexnet/R/A	10.5	08	1.3	264f alma	94.6	1.2	1.4	1.3
Flexnet/R/A	14.7	08	1.8	263f alma	94.6	1.7	1.9	1.8
Flexnet/R/A	135.1	26	5.2	262f alma	94.6	4.9	5.6	5.3
Flexnet/X/A	71.7	10	7.2	286f a sa	93.5	6.7	7.8	7.3
Flexnet/X/A	171.6	13	13.2	18f a e	93.5	12.3	10.8	10.1
Flexnet/X/A	178.1	13	13.7	96f a le	93.5	12.8	11.2	10.5
Jhirmack/R/A	9.1	14	0.7	243f al a	97.5	0.7	0.8	0.7
Jhirmack/R/A	49.1	22	2.2	163f a se	97.5	2.1	1.8	1.8
Jhirmack/R/A	142.9	17	8.4	172f alsa	97.5	8.2	9.1	8.8
Jhirmack/X/A	26.4	11	2.4	100f a me	95.2	2.3	2.0	1.9
Jhirmack/X/A	31.5	08	3.9	180f alma	95.2	3.7	4.2	4.0
Jhirmack/X/A	59.5	15	4.0	16f a me	95.2	3.8	3.3	3.1
Jhirmack/X/A	62.4	33	1.9	211f alma	95.2	1.8	2.1	2.0
Jhirmack/X/A	108.9	16	6.8	121f a mh	95.2	6.5	8.4	8.0
LacoupeFixpl/XFA	14.0	13	1.1	114f a mh	94.7	1.0	1.4	1.3
Mink/R/A	16.8	18	0.9	147f a sf	97.4	0.9	0.7	0.7
Mink/R/A	26.8	14	1.9	287f alsb	97.4	1.9	1.6	1.6
Mink/R/A	26.9	27	1.0	251f almb	97.4	1.0	0.9	0.8
Mink/R/A	29.8	10	3.0	292f alsb	97.4	2.9	2.6	2.5
Mink/R/A	48.3	23	2.1	65f alsb	97.4	2.0	1.8	1.7
Mink/R/A	50.0	22	2.3	149f a mf	97.4	2.2	1.9	1.8
Mink/R/A	68.0	18	3.8	308f almb	97.4	3.7	3.2	3.1
Mink/R/A	110.6	11	10.1	14f a mf	97.4	9.8	8.2	8.0
Mink/R/A	176.3	17	10.4	13f a f	97.4	10.1	8.4	8.2
Mink/X/A	16.7	12	1.4	313f a lh	96.2	1.3	1.7	1.7
Mink/X/A	24.5	15	4.9	60f a mf	96.2	4.7	4.0	3.8
Mink/X/A	78.3	26	3.0	20f al b	96.2	2.9	2.6	2.5
Mink/X/A	123.2	19	6.5	89f a mh	96.2	6.3	8.1	7.8
Mink/X/A	154.3	18	8.6	146f a mf	96.2	8.3	7.0	6.7
Nexus/CT/A	30.4	33	0.9	256f al d	97.5	0.9	0.8	0.8
Nexus/CT/A	58.6	11	5.3	256f al d	97.5	5.2	5.0	4.9
Nexus/CT/A	119.1	16	7.4	1f a sh	97.5	7.2	9.2	8.9
Pantene/F/A	35.7	06	6.0	106f a sg	92.9	5.6	12.2	11.4
Pantene/F/A	49.2	18	2.7	103f a sf	92.9	2.5	2.2	2.0
Pantene/F/A	83.3	23	3.6	234f alsd	92.9	3.3	3.4	3.1
Pantene/F/A	88.4	43	2.1	115f a mh	92.9	2.0	2.6	2.4
Pantene/F/A	96.8	51	1.9	117f a mh	92.9	1.8	2.4	2.2
Pantene/F/A	106.7	18	5.9	113f a mh	92.9	5.5	7.3	6.8
Pantene/F/A	151.2	20	7.6	106f a sg	92.9	7.1	15.5	14.4
Pantene/N/A	13.8	09	1.5	116f a mh	97.8	1.5	1.9	1.8
Rave/MAX/A	171.6	16	10.7	12f a mf	95.9	10.3	8.7	8.3

TABLE 1. PRODUCT USAGE DATA (continued)
FEMALE ADULT AEROSOL USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	PROC VOL %	PROC RATE g/app	WGHT RATE g/app	WGHT PROC RATE g/app
RaveSoft/R/A	25.7	10	2.6	297f almc	96.6	2.5	3.8	3.7
RaveSoft/R/A	43.4	17	2.6	80f allc	96.6	2.5	3.8	3.7
RaveSoft/X/A	73.5	26	2.8	281f alsc	96.3	2.7	4.1	4.0
RaveSoft/X/A	205.2	31	6.6	280f al c	96.3	6.4	9.8	9.4
Sassoon/R/A	8.7	08	1.1	102f alsb	98.8	1.1	0.9	0.9
Sassoon/R/A	32.6	11	3.0	95f a se	98.8	3.0	2.5	2.4
Sassoon/R/A	36.7	17	2.2	97f a me	98.8	2.2	1.8	1.8
Sassoon/R/A	39.7	12	3.3	134f al b	98.8	3.3	2.8	2.8
Sassoon/R/A	39.8	14	2.8	99f a se	98.8	2.8	2.3	2.3
Sassoon/R/A	45.1	11	4.1	213f alsb	98.8	4.1	3.5	3.4
Sassoon/R/A	46.2	16	2.9	144f a me	98.8	2.9	2.4	2.3
Sassoon/X/A	19.3	06	3.2	98f a me	96.8	3.1	2.6	2.5
Sassoon/X/A	19.8	14	1.4	17f a e	96.8	1.4	1.1	1.1
Sassoon/X/A	41.6	12	3.5	216f alsb	96.8	3.4	3.0	2.9
Sassoon/X/A	42.2	10	4.2	23f a me	96.8	4.1	3.4	3.3
Sassoon/X/A	42.8	11	3.9	140f a le	96.8	3.8	3.2	3.1
Sassoon/X/A	60.4	13	4.6	107f a sg	96.8	4.5	9.4	9.1
Sassoon/X/A	78.6	17	4.6	6f a e	96.8	4.5	3.8	3.7
Sassoon/X/A	123.5	33	2.7	94f a le	96.8	2.6	2.2	2.1
Sassoon/X/A	125.8	21	6.0	93f a mh	96.8	5.8	7.4	7.2
SebastShaper/A	10.8	04	2.7	239f almd	95.7	2.6	2.5	2.4
SebastShaper/A	13.0	10	1.3	220f a mf	95.7	1.2	1.1	1.0
SebastShaper/A	15.6	13	1.2	301f alsd	95.7	1.1	1.1	1.1
SebastShaper/A	22.3	14	1.6	91f almd	95.7	1.5	1.5	1.4
SebastShaper/A	30.5	09	3.4	104f a sf	95.7	3.3	2.8	2.6
SebastShaper/A	37.9	09	4.2	248f almd	95.7	4.0	3.9	3.8
SebastShaper/A	45.4	16	2.8	278f almd	95.7	2.7	2.6	2.5
SebastShaper/A	51.1	13	3.9	139f a sh	95.7	3.7	4.8	4.6
SebastShaper/A	58.1	11	5.3	241f alsd	95.7	5.1	5.0	4.8
SebastShaper/A	58.7	18	3.3	25f a mh	95.7	3.2	4.1	3.9
SebastShaper/A	76.4	14	5.5	252f a mh	95.7	5.3	6.8	6.5
SebastShaper/A	78.8	14	5.6	86f alld	95.7	5.4	5.3	5.0
SebastShaper/A	102.8	21	4.9	87f almd	95.7	4.7	4.6	4.4
SebastShaper/A	106.2	59	1.8	5f almd	95.7	1.7	1.7	1.6
SebastShaper/A	113.6	17	6.7	310f a lh	95.7	6.4	8.3	8.0
SebastShaper/A	114.3	18	6.4	311f almd	95.7	6.1	6.0	5.8
SebastShaper/A	118.2	21	5.6	122f a g	95.7	5.4	11.4	10.9
SebastShaper/A	155.7	22	7.1	92f alsd	95.7	6.8	6.7	6.4
SebastShaper/A	167.6	32	5.2	289f almd	95.7	5.0	4.9	4.7
SebastShaper/A	200.4	23	8.7	90f almd	95.7	8.3	8.2	7.8
SebastShaper/A	225.9	43	5.3	124f a sh	95.7	5.1	6.6	6.3
SebastShaper/A	239.7	72	3.3	26f a h	95.7	3.2	4.1	3.9
Silkience/R/A	7.8	07	1.1	165f a lf	97.6	1.1	0.9	0.9
Silkience/R/A	28.2	11	2.6	260f alsb	97.6	2.5	2.2	2.2
Silkience/R/A	47.4	17	2.8	83f al b	97.6	2.7	2.4	2.3
Silkience/R/A	152.5	27	5.6	132f alsb	97.6	5.5	4.8	4.6
Silkience/X/A	47.7	09	5.3	294f al b	96.0	5.1	4.5	4.3
Silkience/X/A	99.8	14	7.1	126f almb	96.0	6.8	6.0	5.8

TABLE 1. PRODUCT USAGE DATA (continued)
FEMALE ADULT AEROSOL USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	PROC VOL %	PROC RATE g/app	WGHT RATE g/app	WGHT PROC RATE g/app
Style/N/A	28.3	15	1.9	185f alsb	96.8	1.8	1.6	1.6
Style/N/A	29.4	18	1.6	22f a mb	96.8	1.5	1.4	1.3
Style/N/A	93.8	10	9.4	63f almb	96.8	9.1	8.0	7.7
TCB/A	25.5	09	2.8	27f al d	97.5	2.7	2.6	2.6
TCB/A	44.5	10	4.4	253f alld	97.5	4.3	4.1	4.0
TCB/A	140.0	12	11.7	257f al d	97.5	11.4	11.0	10.7
VO5 OrigHold/B/A	68.4	14	4.9	69f alsb	94.4	4.6	4.2	3.9
VO5 OrigHold/H/A	32.6	15	2.2	160f a mf	97.6	2.1	1.8	1.7
VO5 OrigHold/H/A	136.7	24	5.7	15f a le	97.6	5.6	4.7	4.6
VO5 OrigHold/R/A	98.0	17	5.8	112f a mg	94.4	5.5	11.8	11.2
VO5 OrigHold/U/A	29.9	22	1.4	7f a se	94.4	1.3	1.1	1.1
VO5 OrigHold/U/A	64.4	17	3.8	70f almb	94.4	3.6	3.2	3.0
VO5 R/A	131.3	20	6.6	255f alsb	94.4	6.2	5.6	5.3
VO5 R/A	174.2	15	11.6	309f almb	94.4	11.0	9.9	9.3
White Rain/R/A	10.6	05	2.1	268f a mf	97.5	2.0	1.7	1.7
White Rain/R/A	40.0	10	4.0	205f a mf	97.5	3.9	3.2	3.2
White Rain/X/A	56.3	20	2.8	11f a mg	96.5	2.7	5.7	5.5
White Rain/X/A	98.2	16	6.1	178f alma	96.5	5.9	6.6	6.4
AVERAGE VALUES			4.5			4.3	5.2	5.0
STANDARD DEVIATIONS			3.2			3.0	4.1	4.0

SAMPLE SIZE: 156

*** KEY

f = female adult

a = aerosol

al = aerosol is user's first choice

l,m, or s = long, medium, or short hair

a-h= group letter (brands were grouped for recruiting)

TABLE 2. PRODUCT USAGE DATA
FEMALE TEEN AEROSOL USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	PROC VOL %	PROC RATE g/app	WGHT RATE g/app	WGHT PROC RATE g/app
AllSet/F/A	133.6	16	8.4	142ftalma	98.1	8.2	9.8	9.6
AllSet/F/A	155.2	28	5.4	135ftalsa	98.1	5.3	6.3	6.2
AquaNet/AP/A	109.1	18	7.9	169ftalmc	98.0	7.7	4.5	4.4
AquaNet/AP/U/A	10.0	09	1.1	30ftalmc	98.0	1.1	0.6	0.6
AquaNet/S/A	27.6	11	2.5	217ftal c	97.0	2.4	1.4	1.4
AquaNet/S/A	63.5	21	3.0	226ftallc	97.0	2.9	1.7	1.7
FinalNet/SFT/A	48.5	11	4.4	35fta se	98.4	4.3	2.3	2.3
Jhirmack/R/A	52.8	33	1.6	296ftalma	97.5	1.6	1.9	1.8
Mink/R/A	34.6	15	2.3	152fta ma	97.4	2.2	2.7	2.6
Mink/R/A	76.1	16	4.8	192ftalsb	97.4	4.7	4.4	4.3
Pantene/F/A	153.2	15	10.2	37fta mg	92.9	9.5	10.9	10.1
RaveSoft/R/A	28.9	08	3.6	31ftal c	96.6	3.5	2.1	2.0
Sassoon/R/A	32.8	18	1.8	307ftalmb	98.8	1.8	1.6	1.6
Sassoon/R/A	36.3	12	3.0	34fta me	98.8	3.0	1.6	1.5
SebastShaper/A	29.1	21	1.4	276ftalld	95.7	1.3	2.0	1.9
SebastShaper/A	38.8	16	2.4	275ftalmd	95.7	2.3	3.4	3.2
SebastShaper/A	47.7	32	1.5	210ftalmd	95.7	1.4	2.1	2.0
SebastShaper/A	49.5	21	2.4	194fta mh	95.7	2.3	3.4	3.2
Silkience/R/A	59.5	18	3.3	29ftalmb	97.6	3.2	3.0	2.9
Style/N/A	113.1	13	19.4	36ftalmb	96.8	18.8	17.7	17.1
VO5 R/A	10.2	12	0.9	302ftalmb	98.1	0.9	0.8	0.8
VO5 R/A	51.7	06	8.6	28ftalmb	98.1	8.4	7.8	7.7
WhiteRain/X/A	176.7	41	4.3	193fta sf	96.5	4.1	3.8	3.7
AVERAGE VALUES			4.5			4.4	4.2	4.0
STANDARD DEVIATIONS			4.2			4.0	4.0	3.9

SAMPLE SIZE: 23

*** KEY

ft = female teen

a = aerosol

al = aerosol is user's first choice

l,m, or s = long, medium, or short hair

a-h= group letter (brands were grouped for recruiting)

TABLE 3. PRODUCT USAGE DATA
FEMALE ADULT PUMP USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	PROC VOL %	PROC RATE g/app	WGHT RATE g/app	WGHT PROC RATE g/app
AquaNet/R/P	1.7	03	0.6	79f p mc	89.3	0.5	0.9	0.8
AquaNet/R/P	7.9	02	4.0	81f p mc	89.3	3.6	5.9	5.3
AquaNet/R/P	12.3	06	2.1	206f p lc	89.3	1.9	3.1	2.8
AquaNet/R/P	32.8	19	1.7	261f p sc	89.3	1.5	2.5	2.2
AquaNet/R/P	43.0	40	1.1	76f p mc	89.3	1.0	1.6	1.5
AquaNet/R/P	115.2	32	3.6	179f p mc	89.3	3.2	5.3	4.8
AquaNet/S/P	8.8	09	1.0	75f p sc	89.2	0.9	1.5	1.3
AquaNet/S/P	32.7	30	1.1	176f p lc	89.2	1.0	1.6	1.5
AquaNet/S/P	41.7	11	3.8	218f p lc	89.2	3.4	5.6	5.0
AquaNet/S/P	53.3	16	3.3	238f p sc	89.2	2.9	4.9	4.4
AquaNet/S/P	70.7	21	3.4	173f p mc	89.2	3.0	5.0	4.5
AquaNet/S/P	94.0	17	5.5	283f p mc	89.2	4.9	8.1	7.3
AquaNet/S/P	181.2	19	9.5	279f p sc	89.2	8.5	14.1	12.5
Atune/R/P	34.8	11	3.2	174f p md	95.5	3.1	3.0	2.9
Breck/R/P	38.8	09	4.3	270f p ma	86.5	3.7	4.6	4.0
Breck/R/P	146.0	16	9.1	293f p ma	86.5	7.9	9.8	8.5
ClairMist/R/P	10.9	06	1.8	104f plsf	90.5	1.7	1.5	1.3
ClairMist/R/P	128.7	12	10.7	112f plmf	90.5	10.1	8.7	7.8
ClairMist/R/P	200.1	19	10.5	106f plsf	90.5	10.0	8.5	7.7
ClairMist/X/P	12.7	13	1.0	220f plmf	90.1	0.9	0.8	0.7
ClairMist/X/P	58.5	06	9.8	106f plsf	90.1	8.8	7.9	7.2
FinalNet/R/P	6.4	16	4.0	148f plle	94.3	3.8	3.3	3.1
FinalNet/R/P	13.2	14	0.9	68f plse	94.3	0.8	0.7	0.7
FinalNet/R/P	20.5	17	1.3	103f plse	94.3	1.2	1.1	1.0
FinalNet/R/P	26.1	10	2.6	9f plme	94.3	2.5	2.1	2.0
FinalNet/R/P	31.5	14	2.2	145f plme	94.3	2.1	1.8	1.7
FinalNet/R/P	41.2	22	1.9	105f plme	94.3	1.8	1.6	1.5
FinalNet/R/P	46.3	18	2.6	8f plme	94.3	2.5	2.1	2.0
FinalNet/R/P	59.7	21	2.8	122f pl e	94.3	2.6	2.3	2.2
FinalNet/R/P	60.6	28	2.2	108f plme	94.3	2.1	1.8	1.7
FinalNet/U/P	11.7	13	0.9	109f plme	94.9	0.9	0.7	0.7
FinalNet/U/P	28.2	17	1.7	107f plse	94.9	1.6	1.4	1.3
FinalNet/U/P	28.6	22	1.3	190f plme	94.9	1.2	1.1	1.0
FinalNet/U/P	57.5	21	2.7	245f plle	94.9	2.6	2.2	2.1
FinalNet/U/P	77.4	16	4.8	164f plme	94.9	4.6	3.9	3.7
FinalNet/U/P	87.2	36	2.4	200f plme	94.9	2.3	2.0	1.9
FinalNet/U/P	92.8	09	10.3	19f p mb	94.9	9.8	8.8	8.3
FinalNet/U/P	135.3	31	4.4	202f plme	94.9	4.2	3.6	3.4
Finesse/X/P	27.6	15	1.8	111f plmg	90.7	1.6	3.7	3.3
Finesse/X/P	32.9	17	1.9	235f p ma	90.7	1.7	2.1	1.9
Finesse/X/P	58.0	12	4.8	236f p sa	90.7	4.4	5.2	4.7
Finesse/X/P	58.9	14	4.2	304f p ma	90.7	3.8	4.5	4.1
Finesse/X/P	69.3	17	4.1	3f plmg	90.7	3.7	8.4	7.6
Flexnet/R/P	8.5	09	0.9	246f plle	91.9	0.8	0.7	0.7
Flexnet/R/P	259.3	16	16.2	96f plle	91.9	14.9	13.3	12.2
Flexnet/U/X/P	182.4	35	5.2	262f p ma	88.8	4.6	5.6	5.0

TABLE 3. PRODUCT USAGE DATA (continued)
FEMALE ADULT PUMP USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	PROC VOL %	PROC RATE g/app	WGHT RATE g/app	WGHT PROC RATE g/app
Flexnet/X/P	23.7	08	3.0	263f p ma	88.8	2.7	3.2	2.9
Flexnet/X/P	201.1	18	11.2	18f pl e	88.8	9.9	9.2	8.2
Jhirmack/R/P	9.6	09	1.1	163f pls f	92.3	1.0	0.9	0.8
Jhirmack/R/P	16.6	21	0.8	14f plmf	92.3	0.7	0.6	0.6
Jhirmack/R/P	88.0	15	5.9	172f p se	92.3	5.4	4.8	4.5
Jhirmack/R/P	105.0	10	10.5	180f p ma	92.3	9.7	11.3	10.5
Jhirmack/X/P	14.9	02	7.5	271f p la	89.9	6.7	8.1	7.3
Jhirmack/X/P	50.9	15	3.4	211f p ma	89.9	3.1	3.7	3.3
Jhirmack/X/P	63.4	18	3.5	211f p ma	89.9	3.1	3.8	3.4
Jhirmack/X/P	87.4	13	6.7	16f plmf	89.9	6.0	5.4	4.9
Jhirmack/X/P	97.9	17	5.8	271f p la	89.9	5.2	6.3	5.6
KMS/F/P	46.1	15	3.1	252f plmh	92.6	2.9	3.8	3.6
LacoupeFixpl/X/P	69.7	17	4.1	114f plmh	88.3	3.6	5.1	4.5
Mink/R/P	11.6	14	0.8	287f p sa	93.9	0.8	0.9	0.8
Mink/R/P	24.6	29	0.8	251f p ma	93.9	0.8	0.9	0.8
Mink/R/P	26.3	24	1.1	147f pls f	93.9	1.0	0.9	0.8
Mink/R/P	27.8	11	2.5	292f p sa	93.9	2.3	2.7	2.5
Mink/R/P	31.3	15	2.1	65f p sa	93.9	2.0	2.3	2.1
Mink/R/P	47.3	15	3.2	308f p ma	93.9	3.0	3.5	3.2
Mink/R/P	58.6	25	2.3	100f plmf	93.9	2.2	1.9	1.7
Mink/R/P	115.4	20	5.8	13f pl f	93.9	5.4	4.7	4.4
Mink/X/P	12.5	19	0.7	60f plmf	92.8	0.6	0.6	0.5
Mink/X/P	38.9	12	3.2	20f p a	92.8	3.0	3.5	3.2
Mink/X/P	50.2	18	2.8	149f plmf	92.8	2.6	2.3	2.1
Mink/X/P	75.1	18	4.2	146f plmf	92.8	3.9	3.4	3.2
Mitchell/FS/P	12.2	09	1.4	161f p lf	92.8	1.3	1.1	1.1
Mitchell/FS/P	32.6	23	1.4	73f p sb	92.8	1.3	1.2	1.1
Mitchell/FS/P	52.2	17	3.1	89f plmh	92.8	2.9	3.8	3.6
Mitchell/FS/P	196.6	28	7.0	310f pllh	92.8	6.5	8.7	8.1
Mitchell/FS/P	202.4	40	5.1	249f p lb	92.8	4.7	4.3	4.0
Mitchell/SCU/P	25.1	14	1.8	25f plmh	94.0	1.7	2.2	2.1
NexusMaxi/HP/P	33.4	13	2.6	1f plsh	86.5	2.2	3.2	2.8
Pantene/F/P	62.1	27	2.3	115f plmh	94.5	2.2	2.9	2.7
Pantene/N/P	31.4	19	1.6	116f plmh	96.9	1.6	2.0	1.9
Pantene/N/P	40.7	11	3.7	234f p sd	96.9	3.6	3.5	3.4
Pantene/N/P	50.4	23	2.2	291f p sd	96.9	2.1	2.1	2.0
Pantene/U/REIN/P	63.3	33	1.9	113f plmh	93.8	1.8	2.4	2.2
Pantene/U/REIN/P	299.0	18	16.6	313f pllh	93.8	15.6	20.6	19.3
Rave/MAX/P	171.2	13	13.2	12f plmf	87.8	11.6	10.7	9.4
Rave/MAX/P	173.5	10	17.4	12f plmf	87.8	15.3	14.1	12.4
Rave/R/P	40.1	14	2.9	80f p lc	87.5	2.5	4.3	3.8
Rave/X/P	15.5	05	3.1	297f p mc	89.3	2.8	4.6	4.1
Rave/X/P	40.5	21	1.9	281f p sc	89.3	1.7	2.8	2.5

TABLE 3. PRODUCT USAGE DATA (continued)
FEMALE ADULT PUMP USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	PROC VOL %	PROC RATE g/app	WGHT RATE g/app	WGHT PROC RATE g/app
Sassoon/R/P	7.2	15	0.5	102f p se	96.8	0.5	0.4	0.4
Sassoon/R/P	7.7	09	0.9	17f pl e	96.8	0.9	0.7	0.7
Sassoon/R/P	15.4	10	1.5	140f plle	96.8	1.5	1.2	1.2
Sassoon/R/P	16.5	04	4.1	213f p sb	96.8	4.0	3.5	3.4
Sassoon/R/P	20.0	23	0.9	95f plse	96.8	0.9	0.7	0.7
Sassoon/R/P	32.4	11	2.9	134f p b	96.8	2.8	2.5	2.4
Sassoon/R/P	33.0	13	2.5	144f plme	96.8	2.4	2.1	2.0
Sassoon/R/P	46.5	16	2.9	99f plse	96.8	2.8	2.4	2.3
Sassoon/R/P	125.3	18	7.0	72f p mb	96.8	6.8	6.0	5.8
Sassoon/X/P	4.1	03	1.4	98f plme	96.9	1.4	1.1	1.1
Sassoon/X/P	26.0	25	1.0	23f plme	96.9	1.0	0.8	0.8
Sassoon/X/P	43.8	24	1.8	6f pl e	96.9	1.7	1.5	1.4
Sassoon/X/P	52.1	38	1.4	94f plle	96.9	1.4	1.1	1.1
Sassoon/X/P	58.0	11	5.3	97f plme	96.9	5.1	4.3	4.2
Sassoon/X/P	64.3	17	3.8	216f p sa	96.9	3.7	4.1	4.0
Sassoon/X/P	96.4	25	3.9	72f p mb	96.9	3.8	3.3	3.2
SebastForte/P	2.8	04	0.7	209f p ma	77.3	0.5	0.8	0.6
SebastForte/P	11.4	15	0.8	301f p sd	77.3	0.6	0.8	0.6
SebastForte/P	20.3	17	1.2	195f p la	77.3	0.9	1.3	1.0
SebastForte/P	27.1	11	2.5	159f p mb	77.3	1.9	2.1	1.6
SebastForte/P	30.2	11	2.7	241f p sd	77.3	2.1	2.5	2.0
SebastForte/P	39.7	11	3.6	278f p md	77.3	2.8	3.4	2.6
SebastForte/P	41.0	10	4.1	269f p md	77.3	3.2	3.9	3.0
SebastForte/P	42.1	14	3.0	181f p sa	77.3	2.3	3.2	2.5
SebastForte/P	43.8	09	4.9	239f p md	77.3	3.8	4.6	3.6
SebastForte/P	47.5	17	2.8	311f p md	77.3	2.2	2.6	2.0
SebastForte/P	71.4	18	4.0	93f plmh	77.3	3.1	5.0	3.8
SebastForte/P	76.2	18	4.2	124f plsh	77.3	3.2	5.2	4.0
SebastForte/P	99.8	38	2.6	199f p mb	77.3	2.0	2.2	1.7
SebastForte/P	163.2	36	4.5	26f pl h	77.3	3.5	5.6	4.3
SebastShpritz/P	23.1	12	1.9	91f p md	0.0	0.0	1.8	0.0
SebastShpritz/P	41.7	29	1.4	289f p md	0.0	0.0	1.3	0.0
SebastShpritz/P	52.1	10	5.2	86f p ld	0.0	0.0	4.9	0.0
SebastShpritz/P	52.6	15	3.5	66f p lb	0.0	0.0	3.0	0.0
SebastShpritz/P	60.0	39	1.5	5f p md	0.0	0.0	1.4	0.0
SebastShpritz/P	62.5	27	2.3	87f p md	0.0	0.0	2.2	0.0
SebastShpritz/P	66.9	13	5.1	74f p mb	0.0	0.0	4.3	0.0
SebastShpritz/P	108.7	18	6.0	92f p sd	0.0	0.0	5.6	0.0
SebastShpritz/P	141.8	24	5.9	90f p md	0.0	0.0	5.5	0.0
SebastShpritz/P	211.0	23	9.2	269f p md	0.0	0.0	8.6	0.0
Silkience/R/P	13.3	07	1.9	260f p sa	91.8	1.7	2.1	1.9
Silkience/R/P	29.4	13	2.3	83f p a	91.8	2.1	2.5	2.3
Silkience/R/P	40.0	09	4.4	165f pllf	91.8	4.0	3.6	3.3
Silkience/R/P	47.0	10	4.7	286f plsf	91.8	4.3	3.8	3.5
Silkience/R/P	71.5	23	3.1	132f p sa	91.8	2.8	3.3	3.1
Silkience/R/P	122.8	17	7.2	126f p ma	91.8	6.6	7.8	7.1
Sta-So-Fro/R/P	93.8	08	11.7	253f p ld	0.0	0.0	11.0	0.0
Sta-So-Fro/XD/P	48.0	08	6.0	27f p d	0.0	0.0	5.6	0.0

TABLE 3. PRODUCT USAGE DATA (continued)
FEMALE ADULT PUMP USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	PROC VOL %	PROC RATE g/app	WGHT RATE g/app	WGHT PROC RATE g/app
Style/S/P	20.2	16	1.3	185f p sb	87.7	1.1	1.1	1.0
Style/S/P	50.7	14	3.6	22f plmg	87.7	3.2	7.3	6.4
Style/S/U/P	46.8	11	4.3	63f p mb	87.7	3.8	3.7	3.2
V05/P	45.7	14	2.7	69f p sb	94.7	2.6	2.3	2.2
V05/P	62.1	27	2.3	7f plse	94.7	2.2	1.9	1.8
V05/P	155.4	29	5.4	15f plle	94.7	5.1	4.4	4.2
V05/R/GR/P	9.4	12	0.8	309f p me	94.7	0.8	0.7	0.6
V05/R/GR/P	24.9	12	2.1	255f p sb	94.7	2.0	1.8	1.7
V05/R/P	21.8	15	1.5	160f plme	94.7	1.4	1.2	1.2
V05/R/P	41.3	16	2.6	70f p mb	94.7	2.5	2.2	2.1
Wellaflex/X/P	75.8	17	4.5	121f plmh	87.0	3.9	5.6	4.9
White Rain/R/P	41.0	12	3.4	268f plmf	91.4	3.1	2.8	2.5
White Rain/R/P	52.0	10	5.2	189f p mc	91.4	4.8	7.7	7.0
White Rain/X/P	31.4	15	2.1	11f plmf	88.9	1.9	1.7	1.5
White Rain/X/P	82.9	18	4.6	178f p ma	88.9	4.1	5.0	4.4
White Rain/X/P	88.1	25	3.5	205f plmf	88.9	3.1	2.8	2.5
AVERAGE VALUES			3.8			3.4	3.8	3.4
STANDARD DEVIATIONS			3.1			2.8	3.1	2.8

SAMPLE SIZE: 153

*** KEY

f = female adult

p = pump

pl = pump is user's first choice

l,m, or s = long, medium, or short hair

a-h= group letter (brands were grouped for recruiting)

TABLE 4. PRODUCT USAGE DATA
FEMALE TEEN PUMP USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	PROC VOL %	PROC RATE g/app	WGHT RATE g/app	WGHT PROC RATE g/app
AquaNet/R/P	23.3	10	2.3	30ftp mc	89.3	2.1	1.3	1.2
AquaNet/R/P	47.9	16	3.0	169ftp mc	89.3	2.7	1.7	1.5
AquaNet/S/P	131.5	37	3.6	226ftp lc	89.2	3.2	2.1	1.8
ClairMist/R/P	198.8	22	9.0	37ftplmf	90.5	8.1	7.9	7.2
ClairMist/X/P	37.3	05	7.5	37ftplmf	90.1	6.8	6.6	5.9
FinalNet/R/P	30.0	15	2.0	35ftplse	94.3	1.9	1.0	1.0
FlexNet/R/P	173.1	41	4.2	142ftp mb	91.9	3.9	3.8	3.5
Jhirmack/R/P	23.6	11	2.1	296ftp ma	92.3	1.9	2.5	2.3
Jhirmack/R/P	69.7	19	3.7	152ftplmf	92.3	3.4	3.3	3.0
KMS/F/P	18.8	07	2.7	31ftp c	92.6	2.5	1.5	1.4
Mink/R/P	120.9	23	5.3	192ftp sa	93.9	5.0	6.2	5.8
Mitchell/FS/P	34.5	20	1.7	194ftplmh	92.8	1.6	2.4	2.2
Sassoon/R/P	15.6	16	1.0	307ftp md	96.8	1.0	1.4	1.4
Sassoon/R/P	24.7	29	0.9	135ftp sb	96.8	0.9	0.8	0.8
Sassoon/R/P	33.7	19	1.8	34ftplme	96.8	1.7	0.9	0.9
Sassoon/R/P	163.3	32	5.1	193ftplse	96.8	4.9	2.7	2.6
SebastForte/P	3.1	11	0.3	275ftp md	77.3	0.2	0.4	0.3
SebastForte/P	18.9	11	1.7	276ftp ld	77.3	1.3	2.4	1.8
SebastForte/P	192.6	27	7.1	210ftp md	77.3	5.5	9.9	7.7
Silkience/R/P	35.6	19	1.9	29ftp mb	91.8	1.7	1.7	1.6
Style/N/P	89.7	12	7.5	36ftp mb	93.3	7.0	6.8	6.4
VO5/R/P	6.8	12	0.6	302ftp mb	94.7	0.6	0.5	0.5
VO5/R/P	47.9	05	9.6	28ftp mb	94.7	9.1	8.7	8.3
AVERAGE VALUES			3.7			3.3	3.3	3.0
STANDARD DEVIATIONS			2.8			2.5	2.9	2.5

SAMPLE SIZE: 23

*** KEY

ft = female teen

p = pump

pl = pump is user's first choice

l,m, or s = long, medium, or short hair

a-h= group letter (brands were grouped for recruiting)

TABLE 5. PRODUCT USAGE DATA
FEMALE ADULT PATTERNS USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	
Patterns	70.1	15	4.7	1f	sh
Patterns	116.1	20	5.8	3f	ma
Patterns	96.3	33	2.9	5f	md
Patterns	46.0	22	2.1	6f	e
Patterns	17.0	21	0.8	7f	se
Patterns	44.7	11	4.1	8f	mg
Patterns	10.7	13	0.8	9f	mg
Patterns	26.4	17	1.6	11f	mg
Patterns	18.7	05	3.8	12f	mf
Patterns	152.4	19	8.0	12f	mf
Patterns	122.8	23	5.3	13f	f
Patterns	40.0	22	1.8	14f	mf
Patterns	84.6	21	4.0	15f	le
Patterns	89.4	14	6.4	16f	me
Patterns	11.9	11	1.1	17f	e
Patterns	150.8	16	9.4	18f	e
Patterns	119.2	13	9.2	19f	mb
Patterns	2.9	25	0.1	20f	a
Patterns	11.3	18	0.6	22f	mb
Patterns	34.4	10	3.4	23f	me
Patterns	32.7	14	2.3	25f	mh
Patterns	22.5	14	1.6	60f	mf
Patterns	74.1	11	6.7	63f	mb
Patterns	33.0	16	2.1	65f	sa
Patterns	115.4	21	5.5	66f	lb
Patterns	18.0	08	2.3	68f	sb
Patterns	54.7	13	4.2	69f	sb
Patterns	86.6	18	4.8	70f	mb
Patterns	109.9	28	3.9	72f	mb
Patterns	72.3	19	3.8	73f	sb
Patterns	38.0	27	1.4	74f	mb
Patterns	42.4	12	3.5	75f	sc
Patterns	85.3	38	2.2	76f	mc
Patterns	30.2	15	2.0	79f	mc
Patterns	62.9	15	4.2	80f	lc
Patterns	95.0	10	9.5	81f	mc
Patterns	18.8	09	2.1	86f	ld
Patterns	20.7	19	1.1	87f	md
Patterns	75.3	14	5.4	89f	mh
Patterns	156.6	38	4.1	90f	md
Patterns	25.4	12	2.1	91f	md
Patterns	128.1	17	7.5	92f	sd
Patterns	126.0	17	7.4	93f	mh
Patterns	63.4	32	2.0	94f	le
Patterns	38.4	16	2.4	95f	se
Patterns	142.7	15	9.5	96f	le
Patterns	31.2	13	2.4	97f	me
Patterns	9.7	03	3.2	98f	me
Patterns	14.2	14	1.0	99f	se
Patterns	35.7	11	3.2	100f	me
Patterns	18.8	08	2.4	102f	se
Patterns	46.3	19	2.4	103f	sf

TABLE 5. PRODUCT USAGE DATA (continued)
FEMALE ADULT PATTERNS USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	
Patterns	34.4	08	4.3	104f	sf
Patterns	93.7	18	5.2	105f	mg
Patterns	142.0	25	5.7	106f	sg
Patterns	52.8	17	3.1	107f	sg
Patterns	16.9	13	1.3	108f	mg
Patterns	2.0	16	0.1	109f	mg
Patterns	75.7	18	4.2	110f	g
Patterns	33.4	09	3.7	111f	mg
Patterns	93.7	12	7.8	112f	mg
Patterns	52.0	20	2.6	113f	mh
Patterns	7.1	13	0.5	114f	mh
Patterns	90.5	42	2.2	115f	mh
Patterns	99.6	24	4.2	116f	mh
Patterns	41.5	35	1.2	117f	mh
Patterns	23.9	13	1.8	121f	mh
Patterns	129.1	20	6.5	122f	g
Patterns	110.1	26	4.2	124f	sh
Patterns	118.4	19	6.2	126f	ma
Patterns	154.7	16	9.7	132f	sa
Patterns	32.2	13	2.5	139f	sh
Patterns	34.2	10	3.4	140f	le
Patterns	22.8	09	2.5	144f	me
Patterns	50.9	13	3.9	145f	mg
Patterns	117.0	22	5.3	146f	mf
Patterns	9.6	15	0.6	147f	sf
Patterns	20.9	08	2.6	148f	lg
Patterns	8.3	11	0.8	149f	mf
Patterns	1.2	01	1.2	159f	mb
Patterns	19.4	15	1.3	160f	mf
Patterns	39.5	06	6.6	161f	lf
Patterns	74.2	30	2.5	163f	se
Patterns	11.8	05	2.4	165f	lf
Patterns	98.4	13	7.6	172f	se
Patterns	85.7	17	5.0	173f	mc
Patterns	68.2	10	6.8	174f	md
Patterns	71.4	34	2.1	176f	lc
Patterns	139.3	16	8.7	178f	ma
Patterns	90.6	18	5.0	179f	mc
Patterns	9.7	11	0.9	180f	ma
Patterns	33.1	09	3.7	181f	sa
Patterns	31.4	19	1.7	185f	sb
Patterns	140.9	21	6.7	189f	mc
Patterns	51.9	16	3.2	190f	mg
Patterns	16.8	14	1.2	195f	la
Patterns	121.9	28	4.4	199f	mb
Patterns	37.0	32	1.2	200f	mg
Patterns	124.9	21	5.9	202f	mg
Patterns	95.4	20	4.8	205f	mf
Patterns	11.2	12	0.9	220f	mf
Patterns	3.0	08	0.4	206f	lc
Patterns	22.1	17	1.3	209f	ma
Patterns	50.9	19	2.7	211f	ma

TABLE 5. PRODUCT USAGE DATA (continued)
FEMALE ADULT PATTERNS USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	
Patterns	4.7	02	2.4	213f	sb
Patterns	47.5	18	2.6	216f	sa
Patterns	54.6	10	5.5	218f	lc
Patterns	60.7	18	3.4	234f	sd
Patterns	42.5	16	2.7	235f	ma
Patterns	38.3	10	3.8	238f	sc
Patterns	51.1	06	8.5	238f	sc
Patterns	14.5	05	2.9	239f	md
Patterns	63.8	06	10.6	241f	sd
Patterns	56.9	20	2.8	245f	lg
Patterns	15.6	07	2.2	246f	la
Patterns	26.9	28	1.0	248f	md
Patterns	128.3	26	4.9	249f	lb
Patterns	30.3	29	1.0	251f	ma
Patterns	69.6	14	5.0	252f	mh
Patterns	26.1	09	2.9	253f	ld
Patterns	80.7	19	4.2	255f	sb
Patterns	16.2	08	2.0	260f	sa
Patterns	66.8	23	2.9	261f	sc
Patterns	155.9	23	6.8	279f	sc
Patterns	19.1	28	0.7	262f	ma
Patterns	6.7	10	0.7	263f	ma
Patterns	27.2	10	2.7	264f	ma
Patterns	21.5	07	3.0	268f	mf
Patterns	106.6	30	3.6	269f	md
Patterns	36.7	17	2.2	270f	ma
Patterns	53.0	11	4.8	278f	md
Patterns	67.3	33	2.0	281f	sc
Patterns	109.7	16	6.9	283f	mc
Patterns	137.3	10	13.7	286f	sa
Patterns	21.9	09	2.4	287f	sa
Patterns	51.9	13	2.3	289f	md
Patterns	15.9	09	1.8	291f	sd
Patterns	58.6	12	4.9	292f	sa
Patterns	116.0	14	8.3	293f	ma
Patterns	32.8	12	2.7	297f	mc
Patterns	23.3	14	1.7	301f	sd
Patterns	83.6	15	5.6	304f	ma
Patterns	52.4	08	6.6	308f	ma
Patterns	19.3	13	1.5	309f	me
Patterns	51.1	27	1.9	310f	lh
Patterns	11.7	11	1.1	311f	md
Patterns	44.6	14	3.2	313f	lh
AVERAGE VALUE			3.7		
STANDARD DEVIATION			2.5		

SAMPLE SIZE: 147

*** KEY

f = female adult

l,m, or s = long, medium, or short hair

a-h= group letter (brands were grouped for recruiting)

TABLE 6. PRODUCT USAGE DATA
FEMALE TEEN PATTERNS USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	
Patterns	43.1	18	2.4	29ft	mb
Patterns	0.3	02	0.2	30ft	mc
Patterns	72.2	20	3.6	34ft	me
Patterns	27.3	11	2.5	35ft	se
Patterns	152.7	21	7.3	36ft	mb
Patterns	156.7	23	6.8	37ft	mg
Patterns	16.9	01	16.9	135ft	sb
Patterns	166.9	32	5.2	142ft	mb
Patterns	25.0	16	1.6	152ft	ma
Patterns	82.0	11	7.5	169ft	mc
Patterns	144.3	22	6.6	192ft	sa
Patterns	139.4	31	4.5	193ft	sf
Patterns	47.2	23	2.1	194ft	mh
Patterns	23.9	28	0.9	210ft	md
Patterns	41.3	07	5.9	226ft	lc
Patterns	18.4	17	1.1	275ft	md
Patterns	62.9	23	2.7	276ft	ld
Patterns	17.5	08	2.2	296ft	ma
Patterns	22.9	17	1.3	302ft	mb
Patterns	20.0	31	0.6	307ft	md

AVERAGE VALUE 4.1

STANDARD DEVIATION 3.9

SAMPLE SIZE: 20

*** KEY

ft = female teen

l,m, or s = long, medium, or short hair

a-h= group letter (brands were grouped for recruiting)

TABLE 7. PRODUCT USAGE DATA
MALE ADULT AEROSOL USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	PROC VOL %	PROC RATE g/app	WGHT RATE g/app	WGHT PROC RATE g/app
AllSet/F/A	15.9	09	1.8	47m alsa	98.1	1.8	1.8	1.8
AllSet/F/A	58.3	18	3.2	48m alma	98.1	3.1	3.3	3.2
AquaNet/AP/A	40.1	08	5.0	317m allc	98.0	4.9	5.1	5.0
AquaNet/AP/A	41.6	09	4.6	316m alsc	98.0	4.5	4.7	4.6
AquaNet/AP/A	61.8	10	6.2	315m almc	98.0	6.1	6.3	6.2
AquaNet/AP/A	157.9	38	4.2	319m alsc	98.0	4.1	4.3	4.2
AquaNet/S/A	115.4	15	7.7	312m almc	97.0	7.5	7.9	7.6
AquaNet/S/A	177.2	45	3.9	318m alsc	97.0	3.8	4.0	3.9
AquaNet/S/A	177.8	21	8.5	50m alsc	97.0	8.2	8.7	8.4
Consort/R/A	20.4	09	2.3	52m a mf	97.7	2.2	2.0	1.9
Consort/R/A	125.1	13	9.6	41m alma	97.7	9.4	9.8	9.6
Consort/R/A	128.9	22	5.9	258m a ma	97.7	5.8	6.0	5.9
Consort/X/A	42.0	15	2.8	21m al a	97.2	2.7	2.9	2.8
Consort/X/A	53.5	17	3.1	21m al a	97.2	3.0	3.2	3.1
DepMen/SH/A	29.3	12	2.4	306m alsd	97.2	2.3	2.4	2.4
DepMen/SH/A	32.2	14	2.3	303m alsd	97.2	2.2	2.0	2.0
FinalNet/R/A	35.9	15	2.4	51m a mg	98.1	2.4	4.7	4.6
FinalNet/R/A	39.5	08	4.9	54m a sg	98.1	4.8	9.5	9.3
FinalNet/R/A	95.8	27	3.5	203m a sg	98.1	3.4	6.8	6.7
FinalNet/R/A	174.8	23	7.6	56m a lg	98.1	7.5	14.7	14.5
FinalNet/R/U/A	13.5	07	1.9	171m a sg	98.1	1.9	3.7	3.6
FinalNet/ULTRA/A	17.0	37	0.5	55m a mg	95.1	0.5	1.0	0.9
FinalNet/ULTRA/A	41.6	12	3.5	53m a lg	95.1	3.3	6.8	6.5
Flexnet/R/A	57.0	22	2.6	166m a me	94.6	2.5	1.8	1.7
Gillette/R/A	12.9	15	0.9	46m al a	98.5	0.9	0.9	0.9
Gillette/R/A	19.3	08	2.4	300m a me	98.5	2.4	1.7	1.6
Gillette/X/A	14.7	13	1.1	285m a me	97.8	1.1	0.8	0.7
Gillette/X/A	60.7	17	3.6	42m alma	97.8	3.5	3.7	3.6
Gillette/X/A	61.2	22	2.8	290m a se	97.8	2.7	1.9	1.9
Gillette/X/A	116.7	21	5.6	125m alma	97.8	5.5	5.7	5.6
Jhirmack/R/A	94.6	22	4.3	187m al a	97.5	4.2	4.4	4.3
Mink/X/A	119.1	27	4.4	198m almb	96.2	4.2	4.0	3.9
Pantene/F/A	43.7	22	1.9	58m a h	92.9	1.8	3.0	2.8
Pantene/F/A	150.6	16	9.4	150m a sg	92.9	8.7	18.2	16.9
ProLine/R/A	51.2	14	3.7	57m almd	94.8	3.5	3.8	3.6
RaveSoft/UNSC/A	35.6	05	7.1	2m alsc	96.6	6.9	7.2	7.0
Sassoon/R/A	0.6	07	0.1	49m allb	98.8	0.1	0.1	0.1
Sassoon/R/A	33.3	13	2.6	250m almb	98.8	2.6	2.4	2.4
Sassoon/R/A	33.8	11	3.1	215m almb	98.8	3.1	2.9	2.8
Sassoon/R/A	40.2	08	5.0	298m a se	98.8	4.9	3.5	3.4

TABLE 7. PRODUCT USAGE DATA (continued)
MALE ADULT AEROSOL USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	PROC VOL %	PROC RATE g/app	WGHT RATE g/app	WGHT PROC RATE g/app
Sassoon/R/A	43.9	13	3.4	212m almb	98.8	3.4	3.1	3.1
Sassoon/R/A	50.0	11	4.5	227m almb	98.8	4.4	4.1	4.1
Sassoon/R/A	123.2	30	4.1	267m a se	98.8	4.1	2.8	2.8
Sassoon/X/A	16.8	10	1.7	162m a me	96.8	1.6	1.2	1.1
Sassoon/X/A	93.7	05	18.7	244m a mb	96.8	18.1	17.2	16.7
Sassoon/X/A	94.5	13	7.3	237m a se	96.8	7.1	5.0	4.9
SebastShaper/A	38.2	10	3.8	170m a mh	95.7	3.6	6.0	5.8
SebastShaper/A	106.7	17	6.3	4m a sh	95.7	6.0	10.0	9.6
SebastShaper/A	107.8	26	4.1	151m a sh	95.7	3.9	6.5	6.2
SebastShaper/A	130.4	36	3.6	24m almd	95.7	3.4	3.7	3.5
SebastShaper/A	175.4	22	8.0	288m a h	95.7	7.7	12.7	12.2
Style/N/A	80.6	13	6.2	158m al b	96.8	6.0	5.7	5.5
Style/S/U/A	191.2	15	12.7	157m al b	96.4	12.2	11.7	11.3
TCB/R/A	76.4	11	6.9	259m a lh	97.5	6.7	11.0	10.7
TCB/R/A	331.8	20	16.6	254m a sh	97.5	16.2	26.4	25.7
Vitalis/N/A	69.5	14	5.0	204m a mf	98.2	4.9	4.3	4.2
Vitalis/X/A	38.5	13	3.0	156m a mf	97.5	2.9	2.6	2.5
AVERAGE VALUES			4.8			4.7	5.6	5.5
STANDARD DEVIATIONS			3.5			3.3	4.8	4.6

SAMPLE SIZE: 57

*** KEY

m = male adult

a = aerosol

al = aerosol is user's first choice

l,m, or s = long, medium, or short hair

a-h= group letter (brands were grouped for recruiting)

TABLE 8. PRODUCT USAGE DATA
MALE TEEN AEROSOL USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	PROC VOL %	PROC RATE g/app	WGHT RATE g/app	WGHT PROC RATE g/app
AquaNet/AP/A	50.8	19	2.7	128mtalmc	98.0	2.6	0.8	0.7
AquaNet/S/A	63.5	20	3.2	184mtalsc	97.0	3.1	0.9	0.9
AquaNet/S/A	107.1	17	6.3	129mtalmc	97.0	6.1	1.8	1.7
AquaNet/S/A	120.1	15	8.0	130mtalsc	97.0	7.8	2.2	2.2
Consort/X/A	15.8	25	0.6	208mtalma	97.2	0.6	1.4	1.4
DepMen/A	87.2	08	10.9	247mtalmd	97.2	10.6	10.7	10.4
Gillette/X/A	97.8	27	3.6	207mtalsb	97.8	3.5	10.7	10.5
Pantene/F/A	95.9	13	7.4	40mta sg	92.9	6.9	3.7	3.4
Sassoon/X/A	79.7	13	6.1	272mta le	96.8	5.9	11.2	10.8
SebastShaper/A	62.5	13	4.8	242mtalmd	95.7	4.6	4.7	4.5
SebastShaper/A	139.2	15	9.3	201mta sd	95.7	8.9	9.1	8.7
AVERAGE VALUES			5.7			5.5	5.2	5.0
STANDARD DEVIATIONS			3.1			3.0	4.3	4.2

SAMPLE SIZE: 11

*** KEY

mt = male teen

a = aerosol

al = aerosol is user's first choice

l,m, or s = long, medium, or short hair

a-h= group letter (brands were grouped for recruiting)

TABLE 9. PRODUCT USAGE DATA
MALE ADULT PUMP USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	PROC VOL %	PROC RATE g/app	WGHT RATE g/app	WGHT PROC RATE g/app
AquaNet/R/P	22.2	12	1.9	317m p lc	89.3	1.7	1.9	1.7
AquaNet/R/P	27.8	12	2.3	316m p sc	89.3	2.1	2.3	2.1
AquaNet/R/P	109.1	14	7.8	315m p mc	89.3	7.0	8.0	7.1
AquaNet/R/P	196.6	35	5.6	318m p sc	89.3	5.0	5.7	5.1
AquaNet/R/P	200.4	30	6.7	319m p sc	89.3	6.0	6.8	6.1
AquaNet/S/P	43.1	09	4.8	312m p mc	89.2	4.3	4.9	4.4
AquaNet/S/P	80.2	18	4.5	50m p sc	89.2	4.0	4.6	4.1
ClairMist/X/P	89.1	11	8.1	150m plsf	90.5	7.3	7.0	6.3
ClairMist/X/P	95.8	14	6.8	150m plsf	90.5	6.2	5.8	5.3
Consort/X/P	20.3	04	5.1	41m p ma	83.3	4.2	5.2	4.3
Consort/X/P	31.1	10	3.1	48m p mb	83.3	2.6	2.9	2.4
Consort/X/P	158.9	17	9.3	258m plmf	83.3	7.7	8.0	6.7
DepMen/S/P	11.7	11	1.1	303m p sd	87.5	1.0	1.1	1.0
DepMen/S/P	20.9	12	1.7	306m p sd	87.5	1.5	1.7	1.5
FinalNet/R/P	12.9	11	1.2	54m plse	94.3	1.1	0.8	0.8
FinalNet/R/P	18.2	08	2.3	171m plse	94.3	2.2	1.6	1.5
FinalNet/R/P	46.0	27	1.7	203m plse	94.3	1.6	1.2	1.1
FinalNet/U/P	13.5	32	0.4	55m plme	94.9	0.4	0.3	0.3
FinalNet/U/P	17.7	13	1.4	51m plme	94.9	1.3	1.0	0.9
FinalNet/U/P	27.9	06	4.6	53m plle	94.9	4.4	3.2	3.0
FinalNet/U/P	44.2	25	1.8	56m plle	94.9	1.7	1.2	1.2
FlexNet/X/P	30.3	13	2.3	166m plme	88.8	2.0	1.6	1.4
Gillette/R/P	21.2	17	1.2	46m p a	98.6	1.2	1.2	1.2
Gillette/X/P	20.7	11	1.9	300m plmf	96.9	1.8	1.6	1.6
Gillette/X/P	23.0	28	1.2	290m plsf	96.9	1.2	1.0	1.0
Gillette/X/P	27.9	16	1.7	125m p ma	96.9	1.6	1.7	1.7
Gillette/X/P	54.7	16	3.4	42m p ma	96.9	3.3	3.5	3.4
Mink/X/P	79.0	26	3.0	198m p ma	92.8	2.8	3.1	2.8
Mitchell/SCU/P	8.5	08	1.1	48m p mb	94.0	1.0	1.0	1.0
Pantene/NT/P	80.9	43	1.9	47m p sb	96.9	1.8	1.7	1.7
PanteneRein/UC/P	71.1	23	3.1	58m pl h	93.8	2.9	4.9	4.6
RaveSoft/U/P	25.7	08	3.2	2m p sc	89.4	2.9	3.3	2.9
Sassoon/R/P	3.9	10	0.4	162m plme	96.8	0.4	0.3	0.3
Sassoon/R/P	5.4	10	0.5	285m plme	96.8	0.5	0.3	0.3
Sassoon/R/P	7.8	06	1.3	49m p lb	96.8	1.3	1.2	1.2
Sassoon/R/P	17.7	12	1.5	212m p mb	96.8	1.5	1.4	1.3
Sassoon/R/P	22.2	07	3.2	298m plse	96.8	3.1	2.2	2.1
Sassoon/R/P	24.9	17	1.5	250m p mb	96.8	1.5	1.4	1.3
Sassoon/R/P	35.4	12	3.0	215m p mb	96.8	2.9	2.8	2.7
Sassoon/R/P	37.7	16	2.4	237m plse	96.8	2.3	1.7	1.6
Sassoon/R/P	38.9	14	2.8	227m p mb	96.8	2.7	2.6	2.5

TABLE 9. PRODUCT USAGE DATA
MALE ADULT PUMP USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	PROC VOL %	PROC RATE g/app	WGHT RATE g/app	WGHT PROC RATE g/app
Sassoon/R/P	137.9	32	4.3	274m p b	96.8	4.2	4.0	3.8
Sassoon/X/P	53.6	27	2.0	267m plse	96.9	1.9	1.4	1.3
SebastForte/P	56.3	17	3.3	24m p md	77.3	2.6	3.4	2.6
SebastForte/X/P	18.5	16	1.2	151m plsh	77.3	0.9	1.9	1.5
SebastForte/X/P	20.8	13	1.6	170m plmh	77.3	1.2	2.5	2.0
SebastForte/X/P	39.2	18	2.2	4m plsh	77.3	1.7	3.5	2.7
SebastForte/X/P	89.0	17	5.2	288m pl h	77.3	4.0	8.3	6.4
SebShpritz/P	29.9	10	3.0	4m plsh	0.0	0.0	4.8	0.0
Sta-So-Fro/XD/P	78.7	25	3.1	259m pllh	0.0	0.0	4.9	0.0
Sta-So-Fro/XD/P	248.6	24	10.4	254m plsh	0.0	0.0	16.5	0.0
Sta-So-Fro/XD/P	249.2	14	17.8	57m p mh	0.0	0.0	28.3	0.0
Style/S/P	58.5	11	5.3	157m p b	87.7	4.6	4.9	4.3
Style/S/P	61.7	14	4.4	158m p b	87.7	3.9	4.0	3.6
Vitalis/N/P	47.3	09	5.3	204m plmf	95.6	5.1	4.6	4.4
Vitalis/S/P	35.2	18	2.0	52m plmf	94.6	1.9	1.7	1.6
Vitalis/S/P	63.1	14	4.5	156m plmf	94.6	4.3	3.9	3.7
AVERAGE VALUES			3.5			2.8	5.6	2.7
STANDARD DEVIATIONS			2.9			1.8	4.2	1.8

SAMPLE SIZE: 57

*** KEY

m = male adult

p = pump

pl = pump is user's first choice

l,m, or s = long, medium, or short hair

a-h= group letter (brands were grouped for recruiting)

TABLE 10. PRODUCT USAGE DATA
MALE TEEN PUMP USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	PROC VOL %	PROC RATE g/app	WGHT RATE g/app	WGHT PROC RATE g/app
AquaNet/R/P	11.5	14	0.8	128mtp mc	89.3	0.7	0.2	0.2
AquaNet/S/P	57.3	18	3.2	184mtp sc	89.2	2.9	0.9	0.8
AquaNet/S/P	78.0	15	5.2	129mtp mc	89.2	4.6	1.5	1.3
AquaNet/S/P	122.0	14	8.7	130mtp sc	89.2	7.8	2.4	2.2
ClairMist/R/P	66.9	07	9.6	40mtplsf	90.5	8.7	4.8	4.3
ClairMist/X/P	94.7	13	7.3	40mtplsf	90.5	6.6	3.7	3.3
Consort/X/P	117.1	26	4.5	208mtp ma	83.3	3.7	10.8	9.0
DepMen/S/P	6.8	10	0.8	247mtp md	87.5	0.7	0.8	0.7
Gillette/X/P	126.2	24	5.3	207mtp sa	96.9	5.1	12.7	12.3
Sassoon/R/P	80.8	18	4.5	272mtplle	96.8	4.4	8.2	8.0
SebForte/P	27.5	18	1.5	242mtp md	77.3	1.1	1.5	1.1
SebForte/P	181.9	32	5.7	201mtplsh	77.3	4.4	12.0	9.3
AVERAGE VALUES			4.8			4.2	5.0	4.4
STANDARD DEVIATIONS			2.9			2.6	4.7	4.2

SAMPLE SIZE: 12

*** KEY

mt = male teen

p = aerosol

pl = aerosol is user's first choice

l,m, or s = long, medium, or short hair

a-h= group letter (brands were grouped for recruiting)

TABLE 11. PRODUCT USAGE DATA
MALE ADULT PATTERNS USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.
Patterns	36.5	04	9.1	2m sc
Patterns	46.8	16	2.9	4m sh
Patterns	45.2	17	2.7	21m a
Patterns	46.9	12	3.9	24m md
Patterns	10.7	04	2.7	41m ma
Patterns	43.0	14	3.1	42m ma
Patterns	9.3	08	1.2	46m a
Patterns	7.6	09	0.8	47m sb
Patterns	33.2	15	2.2	48m mb
Patterns	117.2	18	6.5	50m sc
Patterns	31.9	14	2.3	51m mg
Patterns	6.0	06	1.0	52m mf
Patterns	46.0	12	3.8	53m lg
Patterns	14.2	16	0.9	54m sg
Patterns	3.0	08	0.4	55m mg
Patterns	36.1	21	1.7	56m lg
Patterns	32.7	14	2.3	57m mh
Patterns	52.4	22	2.4	58m h
Patterns	64.4	09	7.2	125m ma
Patterns	162.5	18	9.0	150m sg
Patterns	73.8	20	3.7	151m sh
Patterns	65.3	18	3.6	156m mf
Patterns	78.3	12	6.5	157m b
Patterns	42.6	07	6.1	158m b
Patterns	3.5	08	0.4	162m me
Patterns	61.3	23	2.7	166m me
Patterns	44.8	10	4.5	170m mh
Patterns	14.3	07	2.0	171m sg
Patterns	22.6	08	2.8	198m ma
Patterns	69.7	27	2.6	203m sg
Patterns	68.8	14	4.9	204m mf
Patterns	24.7	13	1.9	212m mb
Patterns	155.8	31	5.0	215m mb
Patterns	26.7	08	3.3	227m mb
Patterns	135.2	32	4.2	244m mb
Patterns	14.6	10	1.5	250m mb
Patterns	168.5	18	9.4	254m sh
Patterns	167.2	18	9.3	258m ma
Patterns	29.9	40	0.7	259m lh
Patterns	74.6	09	8.3	267m se
Patterns	23.5	10	2.4	285m me
Patterns	106.0	21	5.4	288m h
Patterns	44.0	21	2.1	290m se
Patterns	64.0	10	6.4	298m se
Patterns	22.1	08	2.8	300m me
Patterns	24.8	15	1.7	303m sd
Patterns	20.0	09	2.2	306m sd
Patterns	37.8	14	2.7	237m se
Patterns	75.8	16	4.7	312m mc

TABLE 11. PRODUCT USAGE DATA (continued)
MALE ADULT PATTERNS USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	
Patterns	23.0	12	1.9	315m	mc
Patterns	2.5	11	0.2	316m	sc
Patterns	45.2	18	2.5	317m	lc
Patterns	164.8	56	2.9	318m	sc
Patterns	83.2	25	3.3	319m	sc
AVERAGE VALUE			3.3		
STANDARD DEVIATION			2.0		

SAMPLE SIZE: 54

*** KEY

m = male adult

l,m, or s = long, medium, or short hair

a-h= group letter (brands were grouped for recruiting)

TABLE 12. PRODUCT USAGE DATA
MALE TEEN PATTERNS USERS

BRAND NAME	WEIGHT USED	# OF APPLIC	RATE g/app	USER *** IDENT.	PROC VOL %
Patterns	114.3	14	8.3	40mt	sg
Patterns	30.7	09	3.4	128mt	mc
Patterns	22.0	10	2.2	129mt	mc
Patterns	150.6	17	8.9	130mt	sc
Patterns	106.2	23	4.6	184mt	sc
Patterns	14.8	15	1.0	201mt	sd
Patterns	81.6	22	3.7	207mt	sa
Patterns	47.5	16	3.0	208mt	ma
Patterns	69.3	13	5.3	242mt	md
Patterns	100.3	16	6.3	247mt	md
Patterns	5.8	09	0.6	272mt	le

AVERAGE VALUE	4.3
STANDARD DEVIATIONS	2.7

SAMPLE SIZE: 11

*** KEY

mt = male teen

l,m, or s = long, medium, or short hair

a-h= group letter (brands were grouped for recruiting)

TABLE 13
MANN-WHITNEY EVALUATION OF PRIMARY VERSUS SECONDARY USERS

Sample Identification	n_1 n_2	R_1	U	z	s/d
Female Adult Aerosol	73 83	5986.5	2773.5	-0.91	s
Female Adult Pump	70 83	4925	3370	1.70	s
Male Adult Aerosol	28 29	868	350	-0.89	s
Male Adult Pump	28 29	875	343	-1.01	s
Female Teen Aerosol	6 17	80	43	Table	s
Female Teen Pump	7 16	92.5	47.5	Table	s
Male Teen Aerosol	3 8	25	5	Table	s
Male Teen Pump	4 8	35	7	Table	s

Key:

n_1, n_2 = number of values in each sample being compared

R_1 = sum of the ranks for the smaller sample, where the weighted application rates were compared

$U = n_1 n_2 + n_1(n_1 + 1)/2 - R_1$

$z = U - \frac{n_1(n_1 + 1)}{2}$ where $= \frac{n_1 n_2}{2}$ and $= \{n_1 n_2 (n_1 + n_2 + 1)/12\}^{0.5}$

s/d = same or different. S or d indicates that two samples being compared are the same or different on the basis of the z value, or the table value of U if small samples are compared. If two samples are determined to be different on the basis of the z value, z must be less than -1.96 or greater than 1.96 (95% confidence level). When the smaller sample contained 20 or fewer data points and the larger sample contained 40 or fewer data points, a table ("An Extended Table of Critical Values for the Mann-Whitney (Wilcoxon) Two-Sample Statistic", Roy C. Milton, Journal of the American Statistical Association, Vol. 59 (1964), pages 927-933) was used. Values of U were compared.

TABLE 14
MANN-WHITNEY EVALUATION
AEROSOL VS. PUMP, AEROSOL VS. EXXEL, PUMP VS. EXXEL

Sample Identification Product Forms Compared	n_1 n_2	R_1	U	z	s/d
Female Adult	153	21079*	14570	3.36	d*
Aerosol to Pump	156	19750**	15899	5.05	d**
Female Adult	147	19924.5	13885.5	3.17	d
Aerosol to Exxel	156	20030	13780	3.04	d
Female Adult	147	22318.5	11050.5	-0.26	s
Pump to Exxel	153	23921	9448	-2.39	d
Male Adult	57	2727	2486.5	3.12	d
Aerosol to Pump	57	2486.5	2415.5	4.48	d
Male Adult	54	2564	1999	2.71	d
Aerosol to Exxel	57	2562.5	2000.5	2.72	d
Male Adult	54	3092.5	1359.5	-0.90	s
Pump to Exxel	57	3351	1101	-2.45	d
Female Teens	23	499	306	0.91	s
Aerosol to Pump	23	483	322	1.26	s
Female Teens	20	439.5	230.5	Table	s
Aerosol to Exxel	23	439.5	230.5	Table	s
Female Teens	20	463.5	206.5	Table	s
Pump to Exxel	23	473	197	Table	s
Male Teens	11	142.5	55.5	Table	s
Aerosol to Pump	12	141.5	56.5	Table	s
Male Teens	11	122	65	Table	s
Aerosol to Exxel	11	123	64	Table	s
Male Teens	11	134.5	63.5	Table	s
Pump to Exxel	12	136.5	61.5	Table	s

* These are values for the weighted application rates.

** These are values for the weighted PROC application rates.

Key:

n_1, n_2 = number of values in each sample being compared

R_1 = sum of the ranks for the smaller sample, where the weighted application rates were compared

$U = n_1 n_2 + n_1(n_1 + 1)/2 - R_1$

$z = U - \text{where} = n_1 n_2 / 2 \text{ and } = \{n_1 n_2 (n_1 + n_2 + 1) / 12\}^{0.5}$

TABLE 14
MANN-WHITNEY EVALUATION
AEROSOL VS. PUMP, AEROSOL VS. EXXEL, PUMP VS. EXXEL
(Continued)

Key: (Continued)

s/d = same or different. s or d indicates that two samples being compared are the same or different on the basis of the z value, or the table value of U if small samples are compared. If two samples are determined to be different on the basis of the z value, z must be less than -1.96 or greater than 1.96 (95% confidence level). When the smaller sample contained 20 or fewer data points and the larger sample contained 40 or fewer data points, a table ("An Extended Table of Critical Values for the Mann-Whitney (Wilcoxon) Two-Sample Statistic", Roy C. Milton, Journal of the American Statistical Association, Vol. 59 (1964), pages 927-933) was used. Values of U were compared.

APPENDIX B. QUESTIONNAIRE RESPONSES

TABLE 15
QUESTIONNAIRE RESPONSES
FEMALE ADULT AEROSOL USERS

#1) How long have you been using your brand of hair spray?

	#	%	wt%
less than 1 year	37	48.1	45.3
1-4 years	33	42.9	44.2
> 5 years	7	9.1	10.4

#2) What do you particularly like about your brand of hair spray?

	#	%	wt%
hold	43	57.3	60.4
scent	17	22.7	22.1
not too sticky	22	29.3	28.1
long lasting effect	6	8.0	7.1
dries quickly	1	1.3	1.0
easy to style	1	1.3	1.5
recommended by someone	0	0.0	0.0
leaves hair soft, not too stiff	8	10.7	10.0
fairly priced	7	9.3	11.5
other	31	41.3	40.0

#3) What do you particularly dislike about your brand of hair spray?

	#	%	wt%
hold	9	17.6	16.6
wet, stiff looking	5	9.8	12.3
must use alot	1	2.0	1.9
sticky	7	13.7	13.4
itchy scalp	0	0.0	0.0
too much perfume	2	3.9	4.3
scent or smell	9	17.6	19.9
poor packaging	0	0.0	0.0
cost	2	3.9	3.8
other	24	47.1	45.1

#4) What is your main reason for purchasing your brand of hair spray?

	#	%	wt%
hold	18	23.7	25.2
smell or scent	4	5.3	4.8
availability	2	2.6	2.2
advertising	0	0.0	0.0
habit	5	6.6	5.8
cost	18	23.7	25.9
recommended	8	10.5	9.5
minimal damage to hair	1	1.3	1.1
looks natural	2	2.6	2.6
other	34	44.7	44.1

#5) How many brands of hair spray do you currently use?

	#	%	wt%
one	48	61.5	58.2
two	26	33.3	36.6
three or more	4	5.1	5.2

TABLE 15 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT AEROSOL USERS

#6) If your brand was not on the market, which brand would you use?

	#	%	wt%
aerosol to aerosol	34	49.3	50.2
aerosol to pump	35	50.7	49.8

#7) Rate the following attributes according to importance in your decision to purchase a hair spray:

		1*	2*	3*	4*	5*
Holding Power	#	64	5	9	0	0
	%	82.1	6.4	11.5	0.0	0.0
	wt%	83.4	5.3	11.2	0.0	0.0
Dispenses from any angle	#	13	23	13	16	14
	%	16.5	29.1	16.5	20.3	17.7
	wt%	16.4	28.2	16.5	20.3	18.7
Leak proof	#	54	4	16	4	1
	%	68.4	5.1	20.3	5.1	1.3
	wt%	68.4	4.5	21.1	5.1	1.0
Easily shampoos out	#	63	4	11	0	1
	%	79.7	5.1	13.9	0.0	1.3
	wt%	81.0	4.3	13.0	0.0	1.7
Explosion Proof	#	45	8	10	10	4
	%	58.4	10.4	13.0	13.0	5.2
	wt%	58.5	9.4	14.0	13.0	5.1
Odor free	#	29	18	13	15	4
	%	36.7	22.8	16.5	19.0	5.1
	wt%	36.0	22.8	15.9	19.5	5.8
Safe for the environment	#	41	15	11	7	5
	%	51.9	19.0	13.9	8.9	6.3
	wt%	53.1	18.3	12.3	9.2	7.1
No overcap needed	#	9	12	16	19	22
	%	11.5	15.4	20.5	24.4	28.2
	wt%	11.4	15.0	20.4	25.3	27.9
Price	#	17	22	20	13	7
	%	21.5	27.8	25.3	16.5	8.9
	wt%	23.4	27.3	24.5	16.9	7.9
Combs out easily	#	38	19	14	7	1
	%	48.1	24.1	17.7	8.9	1.3
	wt%	47.7	25.2	16.4	9.8	1.0
Dries quickly	#	47	25	6	1	0
	%	59.5	31.6	7.6	1.3	0.0
	wt%	60.6	30.4	7.8	1.3	0.0

TABLE 15 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT AEROSOL USERS

#7) CONTINUED:

Feels natural	#	56	11	9	2	1
	%	70.9	13.9	11.4	2.5	1.3
	wt%	70.5	14.9	10.7	2.8	1.1
Contains no alcohol	#	13	20	9	19	16
	%	16.9	26.0	11.7	24.7	20.8
	wt%	15.9	25.5	11.0	24.5	23.0
Fragrance	#	21	19	19	7	12
	%	26.9	24.4	24.4	9.0	15.4
	wt%	25.5	25.5	24.8	8.7	15.6
Even distribution on hair	#	36	21	18	2	1
	%	46.2	26.9	23.1	2.6	1.3
	wt%	47.5	25.1	23.5	2.3	1.8
Leaves no sticky residue	#	62	11	4	1	0
	%	79.5	14.1	5.1	1.3	0.0
	wt%	78.0	15.1	5.2	1.8	0.0

#8) Rate the performance of YOUR hair spray on the following attributes:

		1**	2**	3**	4**	5**
Holding power	#	30	32	15	1	1
	%	38.0	40.5	19.0	1.3	1.3
	wt%	39.5	40.6	17.6	1.3	1.1
Dispenses from any angle	#	19	29	23	2	1
	%	25.7	39.2	31.1	2.7	1.4
	wt%	25.1	40.0	30.5	2.5	1.8
Leak proof	#	39	28	10	2	0
	%	49.4	35.4	12.7	2.5	0.0
	wt%	49.6	34.8	12.9	2.7	0.0
Easily shampoos out	#	39	26	13	1	0
	%	49.4	32.9	16.5	1.3	0.0
	wt%	47.6	33.5	17.6	1.3	0.0
Explosion proof	#	24	16	18	3	5
	%	36.4	24.2	27.3	4.5	7.6
	wt%	34.9	23.5	28.0	4.6	9.0
Odor free	#	16	15	26	12	8
	%	20.8	19.5	33.8	15.6	10.4
	wt%	19.3	18.4	32.7	18.1	11.5

TABLE 15 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT AEROSOL USERS

#8) CONTINUED:

Safe for the environmemt	#	10	15	18	16	7
	%	15.2	22.7	27.3	24.2	10.6
	wt%	14.6	21.8	25.7	25.4	12.6
No overcap needed	#	15	13	25	13	6
	%	20.8	18.1	34.7	18.1	8.3
	wt%	19.7	18.4	33.9	19.3	8.7
Price	#	15	23	31	5	2
	%	19.7	30.3	40.8	6.6	2.6
	wt%	21.9	31.1	37.9	6.7	2.3
Combs out easily	#	31	21	18	7	2
	%	39.2	26.6	22.8	8.9	2.5
	wt%	40.5	24.1	22.7	9.3	3.5
Dries quickly	#	38	24	17	0	0
	%	48.1	30.4	21.5	0.0	0.0
	wt%	47.7	30.1	22.2	0.0	0.0
Feels natural	#	27	20	21	5	6
	%	34.2	25.3	26.6	6.3	7.6
	wt%	31.8	24.7	27.9	7.4	8.2
Contains no alcohol	#	9	8	27	10	3
	%	15.8	14.0	47.4	17.5	5.3
	wt%	14.5	12.4	47.8	20.2	5.1
Fragrance	#	20	16	22	8	7
	%	27.4	21.9	30.1	11.0	9.6
	wt%	26.7	20.6	29.0	12.7	11.0
Even distribution on hair	#	24	31	19	1	1
	%	31.6	40.8	25.0	1.3	1.3
	wt%	31.7	40.9	25.1	1.0	1.3
Leaves no sticky residue	#	25	24	18	6	5
	%	32.1	30.8	23.1	7.7	6.4
	wt%	30.6	31.0	22.3	9.3	6.9

#9) How many cans of hair spray do you use each month?

	#	%	wt%
<1	34	44.2	42.1
1	25	32.5	33.6
2	17	22.1	22.8
3	0	0.0	0.0
4	1	1.3	1.5
5	0	0.0	0.0

TABLE 15 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT AEROSOL USERS

#10) How much do you pay for your brand of hair spray?

	#	%	wt%		#	%	wt%
less than \$1.00	0	0.0	0.0	\$5.01-\$5.50	1	1.3	1.0
\$1.01-\$1.50	6	7.8	9.5	\$5.51-\$6.00	1	1.3	1.1
\$1.51-\$2.00	18	23.4	24.8	\$6.01-\$6.50	4	5.2	4.7
\$2.01-\$2.51	4	5.2	5.0	\$6.51-\$7.00	5	6.5	5.7
\$2.51-\$3.00	17	22.1	22.6	\$7.01-\$7.50	3	3.9	3.8
\$3.01-\$3.50	4	5.2	4.9	\$7.51-\$8.00	0	0.0	0.0
\$3.51-\$4.00	10	13.0	12.3	\$8.01-\$8.50	0	0.0	0.0
\$4.01-\$4.50	1	1.3	1.1	\$8.51-\$9.00	0	0.0	0.0
\$4.51-\$5.00	3	3.9	3.4	over \$9.00	0	0.0	0.0

#10a) Who decides the brand of hair spray you use?

	#	%	wt%
self	74	93.7	94.2
mother	2	2.5	2.7
father	0	0.0	0.0
spouse	0	0.0	0.0
hairstylist	2	2.5	2.2
other	1	1.3	0.9

#12) What do you like about your alternate hair spray?

	#	%	wt%
hold	19	32.2	32.4
dispenser itself	15	25.4	26.1
even coverage	1	1.7	1.7
scent	8	13.6	14.4
leak proof	0	0.0	0.0
other	39	66.1	65.5

#13) What do you dislike about your alternate hair spray?

	#	%	wt%
leaks	5	8.1	8.0
uneven spray	6	9.7	10.1
scent	11	17.7	18.2
scalp irritation	1	1.6	2.2
dulls hair	2	3.2	3.4
hold	10	16.1	15.9
wet or sticky	17	27.4	30.3
other	43	69.4	68.8

#14) Rate your satisfaction with this alternate form on the following attributes:

		1**	2**	3**	4**	5**
Holding power	#	28	13	26	6	5
	%	35.9	16.7	33.3	7.7	6.4
	wt%	36.9	17.3	32.9	7.2	5.7

TABLE 15 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT AEROSOL USERS

#14) CONTINUED:

Dispenses from any angle	#	18	17	24	14	4
	%	23.4	22.1	31.2	18.2	5.2
	wt%	21.7	22.8	32.2	17.7	5.6
Leak proof	#	23	19	23	6	5
	%	30.3	25.0	30.3	7.9	6.6
	wt%	29.5	25.7	29.9	8.3	6.6
Easily shampoos out	#	22	27	24	5	1
	%	27.8	34.2	30.4	6.3	1.3
	wt%	26.9	33.1	31.7	7.3	1.0
Explosion proof	#	26	19	18	2	1
	%	39.4	28.8	27.3	3.0	1.5
	wt%	39.2	28.3	27.8	2.7	2.1
Odor free	#	4	17	37	12	9
	%	5.1	21.5	46.8	15.2	11.4
	wt%	4.6	21.0	48.4	14.2	11.8
Safe for the environment	#	30	18	22	3	1
	%	40.5	24.3	29.7	4.1	1.4
	wt%	41.1	23.8	30.8	3.1	1.2
No overcap needed	#	13	17	25	16	2
	%	17.8	23.3	34.2	21.9	2.7
	wt%	17.2	21.4	37.7	21.4	2.3
Price	#	4	13	42	11	1
	%	5.6	18.3	59.2	15.5	1.4
	wt%	6.3	18.5	58.7	15.4	1.1
Combs out easily	#	12	16	22	19	10
	%	15.2	20.3	27.8	24.1	12.7
	wt%	14.7	18.2	29.6	23.5	14.0
Dries quickly	#	12	19	30	14	4
	%	15.2	24.1	38.0	17.7	5.1
	wt%	15.4	22.9	39.1	18.6	4.1
Feels natural	#	9	11	20	18	21
	%	11.4	13.9	25.3	22.8	26.6
	wt%	10.6	11.5	26.8	23.0	28.1
Contains no alcohol	#	7	10	30	9	3
	%	11.9	16.9	50.8	15.3	5.1
	wt%	10.7	16.1	52.0	16.1	5.1
Fragrance	#	14	10	34	13	5
	%	18.4	13.2	44.7	17.1	6.6
	wt%	18.2	12.5	44.1	18.5	6.8

TABLE 15 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT AEROSOL USERS

#14) CONTINUED:

Even distribution	#	13	12	30	16	7
on hair	%	16.7	15.4	38.5	20.5	9.0
	wt%	15.7	14.5	39.0	21.6	9.2
Leaves no sticky	#	7	17	22	19	14
residue	%	8.9	21.5	27.8	24.1	17.7
	wt%	8.1	20.0	28.4	23.9	19.7

#15) Comparing your type of dispenser to the alternate, your type is:

		1***	2***	3***	4***	5***
Holding power	#	18	16	30	12	2
	%	23.1	20.5	38.5	15.4	2.6
	wt%	22.9	21.8	38.2	15.1	2.1
Dispenses from any	#	13	22	31	6	3
angle	%	17.3	29.3	41.3	8.0	4.0
	wt%	16.9	29.1	41.5	8.3	4.2
Leak proof	#	13	7	42	6	5
	%	17.8	9.6	57.5	8.2	6.8
	wt%	16.7	9.7	57.2	8.7	7.7
Easily shampoos out	#	11	15	46	4	2
	%	14.1	19.2	59.0	5.1	2.6
	wt%	13.3	17.1	60.7	5.5	3.5
Explosion proof	#	11	5	38	7	7
	%	16.2	7.4	55.9	10.3	10.3
	wt%	17.4	6.3	55.3	9.7	11.3
Odor free	#	8	16	42	7	5
	%	10.3	20.5	53.8	9.0	6.4
	wt%	9.7	17.9	53.6	10.6	8.2
Safe for the	#	14	5	34	7	8
environment	%	20.6	7.4	50.0	10.3	11.8
	wt%	20.7	6.2	50.0	10.1	13.1
No overcap needed	#	6	7	51	5	3
	%	8.3	9.7	70.8	6.9	4.2
	wt%	8.1	8.5	71.8	7.2	4.4
Price	#	7	7	45	10	0
	%	10.1	10.1	65.2	14.5	0.0
	wt%	9.7	10.6	64.4	15.4	0.0
Combs out easily	#	8	24	31	9	3
	%	10.7	32.0	41.3	12.0	4.0
	wt%	10.1	30.6	42.2	11.9	5.1

TABLE 15 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT AEROSOL USERS

#15) CONTINTUED:

Dries quickly	#	10	21	38	6	3
	%	12.8	26.9	48.7	7.7	3.8
	wt%	12.3	26.4	49.9	6.8	4.6
Feels natural	#	15	19	27	13	4
	%	19.2	24.4	34.6	16.7	5.1
	wt%	18.9	22.7	36.2	16.0	6.1
Contains no alcohol	#	3	4	45	6	2
	%	5.0	6.7	75.0	10.0	3.3
	wt%	4.3	6.0	76.2	10.4	3.1
Fragrance	#	10	16	40	5	3
	%	13.5	21.6	54.1	6.8	4.1
	wt%	12.6	20.8	54.1	7.5	5.0
Even distribution on hair	#	18	16	31	9	4
	%	23.1	20.5	39.7	11.5	5.1
	wt%	24.3	19.1	38.7	11.9	5.9
Leaves no sticky residue	#	16	15	33	9	5
	%	20.5	19.2	42.3	11.5	6.4
	wt%	20.8	18.5	42.8	10.9	7.1

#16) Overall, which type of dispenser do you like best, aerosol or pump?

	#	%	wt%
aerosol	51	66.2	64.9
pump	26	33.8	35.1

#17) Rate your satisfaction with PATTERNS on the following attributes

		1**	2**	3**	4**	5**
Holding power	#	25	16	23	13	2
	%	31.6	20.3	29.1	16.5	2.5
	wt%	32.5	19.8	27.9	16.3	3.5
Dispenses from any angle	#	33	19	19	5	1
	%	42.9	24.7	24.7	6.5	1.3
	wt%	44.8	23.8	23.5	6.1	1.8
Leak proof	#	33	26	10	7	2
	%	42.3	33.3	12.8	9.0	2.6
	wt%	43.9	31.8	13.1	8.2	3.0
Easily shampoos out	#	35	21	15	7	0
	%	44.9	26.9	19.2	9.0	0.0
	wt%	47.3	26.5	17.8	8.4	0.0
Explosion proof	#	22	14	19	3	3
	%	36.1	23.0	31.1	4.9	4.9
	wt%	39.1	20.7	30.0	4.1	6.1

TABLE 15 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT AEROSOL USERS

#17) CONTINUED:

Odor free	#	10	11	22	13	22
	%	12.8	14.1	28.2	16.7	28.2
	wt%	13.9	14.3	28.1	16.6	27.1
Safe for the environment	#	27	16	18	7	3
	%	38.0	22.5	25.4	9.9	4.2
	wt%	40.7	20.7	24.2	8.6	5.7
No overcap needed	#	25	17	23	5	2
	%	34.7	23.6	31.9	6.9	2.8
	wt%	37.3	22.8	30.9	6.0	3.0
Price	#	2	1	11	3	1
	%	11.1	5.6	61.1	16.7	5.6
	wt%	13.0	5.2	57.1	16.5	8.2
Combs out easily	#	23	16	22	12	6
	%	29.1	20.3	27.8	15.2	7.6
	wt%	31.7	19.0	26.6	15.2	7.5
Dries quickly	#	22	18	15	18	5
	%	28.2	23.1	19.2	23.1	6.4
	wt%	31.2	21.6	17.8	22.8	6.5
Feels natural	#	16	15	22	15	11
	%	20.3	19.0	27.8	19.0	13.9
	wt%	22.9	18.8	26.6	17.6	14.0
Contains no alcohol	#	8	9	20	9	13
	%	13.6	15.3	33.9	15.3	22.0
	wt%	14.4	15.3	34.5	14.2	21.6
Fragrance	#	14	15	18	14	17
	%	17.9	19.2	23.1	17.9	21.8
	wt%	18.7	20.6	22.2	17.4	21.0
Even distribution on hair	#	26	20	20	7	6
	%	32.9	25.3	25.3	8.9	7.6
	wt%	35.4	24.4	24.0	8.1	8.1
Leaves no sticky residue	#	17	17	22	13	10
	%	21.5	21.5	27.8	16.5	12.7
	wt%	23.4	20.5	27.8	15.9	12.4

#18) Rank order of products tested for specified attributes

	own brand			alternate			PATTERNS		
#18a) holding power	#	%	wt%	#	%	wt%	#	%	wt%
liked best	29	12.6	12.6	21	9.1	8.8	29	12.6	13.1
neutral	32	13.9	14.1	25	10.9	11.0	16	7.0	6.6
liked least	16	7.0	6.7	31	13.5	13.7	31	13.5	13.5

TABLE 15 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT AEROSOL USERS

#18) CONTINUED:

#18b) dispenses from any angle

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	23	10.0	9.5	11	4.8	4.7	43	18.7	19.3
neutral	35	15.2	15.2	32	13.9	14.2	15	6.5	5.7
liked least	19	8.3	8.8	33	14.3	14.1	19	8.3	8.4

#18c) leak proof

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	25	10.8	10.5	8	3.5	3.3	42	18.2	18.3
neutral	35	15.2	14.8	37	16.0	15.5	17	7.4	6.3
liked least	18	7.8	8.7	31	13.4	14.1	18	7.8	8.6

#18d) easily shampoos out

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	27	11.6	11.2	13	5.6	5.3	36	15.5	15.9
neutral	32	13.7	13.7	32	13.7	14.3	22	9.4	9.2
liked least	20	8.6	8.9	32	13.7	13.5	19	8.2	8.0

#18e) explosion proof

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	11	5.4	5.5	16	7.9	7.9	30	14.9	15.5
neutral	32	15.8	15.5	32	15.8	15.8	27	13.4	12.4
liked least	25	12.4	12.7	19	9.4	9.3	10	5.0	5.3

#18f) odor free

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	34	14.6	14.0	18	7.7	7.4	24	10.3	10.6
neutral	28	12.0	12.0	43	18.5	19.2	14	6.0	5.8
liked least	16	6.9	7.5	17	7.3	6.9	39	16.7	16.7

#18g) safer for environment

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	15	7.1	7.6	16	7.6	7.7	35	16.7	16.8
neutral	24	11.4	11.3	38	18.1	17.5	21	10.0	9.5
liked least	32	15.2	14.8	14	6.7	7.1	15	7.1	7.6

#18h) no overcap needed

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	17	7.8	7.9	13	6.0	6.0	36	16.5	16.4
neutral	35	16.1	15.9	38	17.4	17.3	23	10.6	10.7
liked least	21	9.6	9.6	21	9.6	9.8	14	6.4	6.5

#18i) price

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	30	18.5	19.2	8	4.9	4.7	12	7.4	7.7
neutral	21	13.0	12.6	35	21.6	22.0	20	12.3	11.4
liked least	7	4.3	4.4	11	6.8	6.4	18	11.1	11.7

#18j) combs out easily

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	30	13.3	12.8	12	5.3	5.0	31	13.7	14.4
neutral	27	11.9	12.1	33	14.6	15.2	20	8.8	8.4
liked least	20	8.8	9.3	30	13.3	12.9	23	10.2	10.0

TABLE 15 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT AEROSOL USERS

#18) CONTINUED:

#18k) dries quickly

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	38	16.5	16.7	13	5.7	5.5	27	11.7	11.9
neutral	27	11.7	11.6	33	14.3	14.7	21	9.1	9.0
liked least	13	5.7	5.6	30	13.0	12.7	28	12.2	12.3

#18l) feels natural

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	29	12.7	12.4	14	6.1	5.8	32	14.0	15.0
neutral	26	11.4	11.4	31	13.6	13.9	21	9.2	8.8
liked least	21	9.2	9.5	30	13.2	13.1	24	10.5	10.0

#18m) contains no alcohol

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	9	5.1	5.2	9	5.1	5.0	28	15.9	15.8
neutral	26	14.8	13.7	32	18.2	18.6	17	9.7	9.6
liked least	24	13.6	14.5	17	9.7	9.4	14	8.0	8.1

#18n) fragrance

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	28	12.1	12.0	17	7.4	7.1	26	11.3	11.6
neutral	29	12.6	12.0	36	15.6	16.1	14	6.1	5.5
liked least	20	8.7	9.3	23	10.0	9.6	38	16.5	16.7

#18o) even distribution on hair

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	30	13.1	13.0	11	4.8	4.7	38	16.6	17.2
neutral	32	14.0	14.1	33	14.4	14.8	13	5.7	5.4
liked least	15	6.6	6.7	32	14.0	13.6	25	10.9	10.5

#18p) leaves no sticky residue

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	30	13.1	12.9	12	5.2	5.0	32	14.0	14.8
neutral	25	10.9	11.1	31	13.5	14.2	18	7.9	7.2
liked least	23	10.0	10.2	33	14.4	14.0	25	10.9	10.7

#19) Overall, which product did you like most?

	#	%	wt%
my brand	26	32.9	32.4
alternate version	15	19.0	17.7
PATTERNS	38	48.1	49.9

#19a) Why?

	#	%	wt%
hold	32	41.0	40.9
doesn't dry hair	2	2.6	2.8
dispenser	10	12.8	13.4
scent	25	32.1	32.3
other	62	79.5	80.0

TABLE 15 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT AEROSOL USERS

#20) Overall, which product did you like least?

	#	%	wt%
my brand	11	13.9	15.2
alternate version	41	51.9	51.6
PATTERNS	27	34.2	33.2

#20a) Why?

	#	%	wt%
dislike container	9	11.4	13.1
dispensing uneven spray	13	16.5	15.7
scent	28	35.4	35.6
irritated skin	1	1.3	1.7
hold	18	22.8	22.9
sticky	14	17.7	18.5
didn't wash out easily	3	3.8	4.5
other	51	64.6	63.1

#21) Were you aware that PATTERNS was neither an aerosol or pump?

	#	%	wt%
yes	50	63.3	64.9
no	29	36.7	35.1

#22) How likely would you be to purchase PATTERNS at the same price as your own brand?

	#	%	wt%
very likely	36	45.6	46.7
somewhat likely	12	15.2	14.3
neutral	4	5.1	6.0
somewhat unlikely	5	6.3	7.2
definitely not	22	27.8	25.9

#22a) Why?

	#	%	wt%		#	%	wt%
easy to use	1	1.3	1.0	hair condition	4	5.1	5.2
like it	23	29.1	31.7	hold	11	13.9	14.1
container itself	9	11.4	11.9	other	49	62.0	59.9
scent	14	17.7	15.8				

#23) Would you pay more for PATTERNS than your own hair spray?

	#	%	wt%
yes	25	32.1	35.1
no	53	67.9	64.9

#24) If PATTERNS retailed for \$5.00 per container, would you say that price is...

	#	%	wt%
too high	52	67.5	69.1
just about right	25	32.5	30.9
not enough	0	0.0	0.0

TABLE 15 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT AEROSOL USERS

#25) Which type of dispenser do you like best?

	#	%	wt%
pump	7	9.0	8.4
aerosol	19	24.4	23.6
PATTERNS	52	66.7	68.1

KEY TO MULTIPLE CHOICE QUESTIONS

#7	#8, #14, #17	#15
1* Very Important	1** Excellent	1*** Much Better
2* Somewhat Important	2** Very Good	2*** Somewhat Better
3* Important	3** Good	3*** Same
4* Somewhat Unimportant	4** Poor	4*** Somewhat Worse
5* Not at all Important	5** Very Poor	5*** Much Worse

DEMOGRAPHICS

SEX	#	%	wt%
male	0	0.0	0.0
female	79	100.0	100.0

MARITAL STATUS	#	%	wt%
married	22	28.2	27.5
single	51	65.4	64.9
other	5	6.4	7.6

AGE BRACKET	#	%	wt%
18 or under	0	0.0	0.0
19 - 24	25	31.6	31.8
25 - 34	21	26.6	26.5
35 - 44	14	17.7	17.9
45 - 54	7	8.9	8.7
over 55	12	15.2	15.0

NUMBER OF PEOPLE IN HOUSEHOLD	#	%	wt%
one	17	21.5	22.3
two	26	32.9	31.5
three or more	36	45.6	46.2

HIGHEST LEVEL OF EDUCATION COMPLETED	#	%	wt%
some high school or less	0	0.0	0.0
high school graduate, no college	8	10.1	10.8
some college	35	44.3	44.4
trade/vocational school	8	10.1	9.8
college graduate	19	24.1	23.9
post graduate study	5	6.3	6.8
post graduate degree	4	5.1	4.3

POSITION IN FAMILY	#	%	wt%
one person household	20	32.3	32.5
head of family	5	8.1	8.2
spouse of head of family	20	32.3	31.2
son/daughter of head of family	17	27.4	28.1
other	17	27.4	26.3

TABLE 16
QUESTIONNAIRE RESPONSES
FEMALE TEEN AEROSOL USERS

#1) How long have you been using your brand of hair spray?

	#	%	wt%
less than 1 year	9	60.0	61.9
1-4 years	6	40.0	38.1
> 5 years	0	0.0	0.0

#2) What do you particularly like about your brand of hair spray?

	#	%	wt%
hold	8	61.5	55.9
scent	4	30.8	42.8
not too sticky	4	30.8	32.9
long lasting effect	0	0.0	0.0
dries quickly	0	0.0	0.0
easy to style	0	0.0	0.0
recommended by someone	0	0.0	0.0
leaves hair soft, not too stiff	3	23.1	25.7
fairly priced	0	0.0	0.0
other	3	23.1	27.8

#3) What do you particularly dislike about your brand of hair spray?

	#	%	wt%
hold	2	16.7	18.2
wet, stiff looking	2	16.7	13.0
must use alot	1	8.3	8.0
sticky	1	8.3	10.3
itchy scalp	0	0.0	0.0
too much perfume	0	0.0	0.0
scent or smell	5	41.7	36.2
poor packaging	0	0.0	0.0
cost	1	8.3	12.3
other	5	41.7	45.8

#4) What is your main reason for purchasing your brand of hair spray?

	#	%	wt%
hold	4	30.8	26.5
smell or scent	2	15.4	19.7
availability	0	0.0	0.0
advertising	0	0.0	0.0
habit	1	7.7	7.0
cost	1	7.7	7.0
recommended	1	7.7	10.7
minimal damage to hair	0	0.0	0.0
looks natural	0	0.0	0.0
other	6	46.2	46.8

#5) How many brands of hair spray do you currently use?

	#	%	wt%
one	8	53.3	58.9
two	5	33.3	29.6
three or more	2	13.3	11.5

TABLE 16 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN AEROSOL USERS

#6) If your brand was not on the market, which brand would you use?

	#	%	wt%
aerosol to aerosol	8	53.3	57.4
aerosol to pump	7	46.7	42.6

#7) Rate the following attributes according to importance in your decision to purchase a hair spray:

		1*	2*	3*	4*	5*
Holding power	#	11	1	3	0	0
	%	73.3	6.7	20.0	0.0	0.0
	wt%	69.4	6.0	24.6	0.0	0.0
Dispenses from any angle	#	1	2	3	7	2
	%	6.7	13.3	20.0	46.7	13.3
	wt%	6.0	12.0	16.8	49.8	15.3
Leak proof	#	11	1	2	1	0
	%	73.3	6.7	13.3	6.7	0.0
	wt%	76.4	7.7	9.8	6.0	0.0
Easily shampoos out	#	10	1	4	0	0
	%	66.7	6.7	26.7	0.0	0.0
	wt%	68.9	6.0	25.1	0.0	0.0
Explosion proof	#	8	1	1	2	2
	%	57.1	7.1	7.1	14.3	14.3
	wt%	57.2	6.6	10.2	10.8	15.2
Odor free	#	3	5	4	0	2
	%	21.4	35.7	28.6	0.0	14.3
	wt%	16.8	36.8	27.6	0.0	18.7
Safe for the environment	#	7	2	4	1	1
	%	46.7	13.3	26.7	6.7	6.7
	wt%	51.4	9.8	26.8	6.0	6.0
No overcap needed	#	0	5	3	6	1
	%	0.0	33.3	20.0	40.0	6.7
	wt%	0.0	25.1	24.6	41.1	9.3
Price	#	3	6	3	2	1
	%	20.0	40.0	20.0	13.3	6.7
	wt%	23.0	36.6	19.1	15.3	6.0
Combs out easily	#	5	4	4	2	0
	%	33.3	26.7	26.7	13.3	0.0
	wt%	34.3	26.8	29.1	9.8	0.0
Dries quickly	#	2	8	5	0	0
	%	13.3	53.3	33.3	0.0	0.0
	wt%	15.3	44.9	39.8	0.0	0.0

TABLE 16 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN AEROSOL USERS

#7) Rate the following attributes according to importance in your decision to purchase a hair spray (continued):

		1*	2*	3*	4*	5*
Feels natural	#	13	0	1	1	0
	%	86.7	0.0	6.7	6.7	0.0
	wt%	90.2	0.0	6.0	3.8	0.0
Contains no alcohol	#	0	3	3	5	4
	%	0.0	20.0	20.0	33.3	26.7
	wt%	0.0	19.1	19.3	31.1	30.6
Fragrance	#	4	5	3	0	3
	%	26.7	33.3	20.0	0.0	20.0
	wt%	27.5	28.9	24.6	0.0	19.1
Even distribution on hair	#	2	6	2	4	1
	%	13.3	40.0	13.3	26.7	6.7
	wt%	9.8	40.6	15.3	28.3	6.0
Leaves no sticky residue	#	10	2	3	0	0
	%	66.7	13.3	20.0	0.0	0.0
	wt%	63.4	12.0	24.6	0.0	0.0

#8) Rate the performance of YOUR hair spray on the following attributes:

		1**	2**	3**	4**	5**
Holding power	#	2	5	6	2	0
	%	13.3	33.3	40.0	13.3	0.0
	wt%	13.0	39.3	33.9	13.8	0.0
Dispenses from any angle	#	2	3	9	1	0
	%	13.3	20.0	60.0	6.7	0.0
	wt%	12.0	20.8	63.4	3.8	0.0
Leak proof	#	5	6	3	1	0
	%	33.3	40.0	20.0	6.7	0.0
	wt%	36.6	34.3	19.8	9.3	0.0
Easily shampoos out	#	4	6	4	1	0
	%	26.7	40.0	26.7	6.7	0.0
	wt%	30.6	38.8	26.8	3.8	0.0
Explosion proof	#	3	3	4	1	1
	%	25.0	25.0	33.3	8.3	8.3
	wt%	19.5	26.3	39.9	4.7	9.6
Odor free	#	1	1	6	2	5
	%	6.7	6.7	40.0	13.3	33.3
	wt%	9.3	6.0	40.4	12.0	32.3
Safe for the environment	#	1	0	6	3	1
	%	9.1	0.0	54.5	27.3	9.1
	wt%	8.0	0.0	51.9	29.8	10.3

TABLE 16 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN AEROSOL USERS

#8) Rate the performance of YOUR hair spray on the following attributes (continued):

		1**	2**	3**	4**	5**
No overcap needed	#	0	2	6	6	1
	%	0.0	13.3	40.0	40.0	6.7
	wt%	0.0	12.0	46.1	38.1	3.8
Price	#	3	3	6	2	1
	%	20.0	20.0	40.0	13.3	6.7
	wt%	18.1	19.1	36.6	17.0	9.3
Combs out easily	#	3	3	6	2	1
	%	20.0	20.0	40.0	13.3	6.7
	wt%	21.3	24.6	38.8	11.5	3.8
Dries quickly	#	3	6	5	1	0
	%	20.0	40.0	33.3	6.7	0.0
	wt%	22.3	34.9	35.1	7.7	0.0
Feels natural	#	5	4	3	1	2
	%	33.3	26.7	20.0	6.7	13.3
	wt%	39.8	29.1	15.8	3.8	11.5
Contains no alcohol	#	0	3	6	4	1
	%	0.0	21.4	42.9	28.6	7.1
	wt%	0.0	27.1	42.8	26.0	4.2
Fragrance	#	6	2	2	3	2
	%	40.0	13.3	13.3	20.0	13.3
	wt%	45.3	12.0	15.3	19.8	7.5
Even distribution on hair	#	3	5	7	0	0
	%	20.0	33.3	46.7	0.0	0.0
	wt%	19.1	32.8	48.1	0.0	0.0
Leaves no sticky residue	#	3	3	5	2	2
	%	20.0	20.0	33.3	13.3	13.3
	wt%	24.6	21.3	29.6	13.0	11.5

#9) How many cans of hair spray do you use each month?

	#	%	wt%
<1	8	53.3	53.4
1	3	20.0	17.5
2	4	26.7	29.1
3	0	0.0	0.0
4	0	0.0	0.0
5	0	0.0	0.0

TABLE 16 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN AEROSOL USERS

#10) How much do you pay for your brand of hair spray?

	#	%	wt%		#	%	wt%
less than \$1.00	0	0.0	0.0	\$5.01-\$5.50	0	0.0	0.0
\$1.01-\$1.50	2	13.3	9.8	\$5.51-\$6.00	0	0.0	0.0
\$1.51-\$2.00	3	20.0	15.8	\$6.01-\$6.50	0	0.0	0.0
\$2.01-\$2.51	2	13.3	9.8	\$6.51-\$7.00	0	0.0	0.0
\$2.51-\$3.00	3	20.0	21.5	\$7.01-\$7.50	1	6.7	9.3
\$3.01-\$3.50	2	13.3	15.3	\$7.51-\$8.00	0	0.0	0.0
\$3.51-\$4.00	2	13.3	18.5	\$8.01-\$8.50	0	0.0	0.0
\$4.01-\$4.50	0	0.0	0.0	\$8.51-\$9.00	0	0.0	0.0
\$4.51-\$5.00	0	0.0	0.0	over \$9.00	0	0.0	0.0

#10a) Who decides the brand of hair spray you use?

	#	%	wt%
self	12	80.0	82.5
mother	3	20.0	17.5
father	0	0.0	0.0
spouse	0	0.0	0.0
hairstylist	0	0.0	0.0
other	0	0.0	0.0

#12) What do you like about your alternate hair spray?

	#	%	wt%
hold	2	16.7	18.7
dispenser itself	5	41.7	42.2
even coverage	0	0.0	0.0
scent	2	16.7	18.7
leak proof	0	0.0	0.0
other	6	50.0	48.6

#13) What do you dislike about your alternate hair spray?

	#	%	wt%
leaks	2	16.7	21.0
uneven spray	2	16.7	18.9
scent	1	8.3	9.6
scalp irritation	0	0.0	0.0
dulls hair	0	0.0	0.0
hold	0	0.0	0.0
wet or sticky	4	33.3	29.1
other	7	58.3	55.4

#14) Rate your satisfaction with this alternate form on the following attributes:

		1**	2**	3**	4**	5**
Holding power	#	6	3	4	1	0
	%	42.9	21.4	28.6	7.1	0.0
	wt%	40.6	28.0	23.2	8.2	0.0

TABLE 16 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN AEROSOL USERS

#14) Rate your satisfaction with this alternate form on the following attributes (continued):

		1**	2**	3**	4**	5**
Dispenses from any angle	#	1	2	7	4	0
	%	7.1	14.3	50.0	28.6	0.0
	wt%	4.0	10.4	62.3	23.2	0.0
Leak proof	#	2	2	5	4	1
	%	14.3	14.3	35.7	28.6	7.1
	wt%	8.0	16.3	40.8	25.1	9.9
Easily shampoos out	#	5	2	6	1	0
	%	35.7	14.3	42.9	7.1	0.0
	wt%	38.4	10.4	43.0	8.2	0.0
Explosion proof	#	1	4	7	0	1
	%	7.7	30.8	53.8	0.0	7.7
	wt%	7.1	29.6	58.8	0.0	4.5
Odor free	#	0	4	4	1	4
	%	0.0	30.8	30.8	7.7	30.8
	wt%	0.0	33.0	32.2	6.8	27.9
Safe for the environment	#	0	3	7	1	1
	%	0.0	25.0	58.3	8.3	8.3
	wt%	0.0	26.3	59.4	9.6	4.7
No overcap needed	#	1	1	7	2	3
	%	7.1	7.1	50.0	14.3	21.4
	wt%	6.4	4.0	49.6	16.3	23.7
Price	#	1	2	10	0	1
	%	7.1	14.3	71.4	0.0	7.1
	wt%	6.4	8.0	75.7	0.0	9.9
Combs out easily	#	0	3	5	5	1
	%	0.0	21.4	35.7	35.7	7.1
	wt%	0.0	22.7	38.4	34.9	4.0
Dries quickly	#	2	3	4	3	1
	%	15.4	23.1	30.8	23.1	7.7
	wt%	14.8	24.2	34.8	17.4	8.8
Feels natural	#	1	3	6	3	1
	%	7.1	21.4	42.9	21.4	7.1
	wt%	9.9	20.3	41.3	22.1	6.4
Contains no alcohol	#	0	2	8	1	1
	%	0.0	16.7	66.7	8.3	8.3
	wt%	0.0	12.1	70.9	7.4	9.6
Fragrance	#	3	4	3	2	2
	%	21.4	28.6	21.4	14.3	14.3
	wt%	20.3	28.5	22.7	16.3	12.3

TABLE 16 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN AEROSOL USERS

#14) Rate your satisfaction with this alternate form on the following attributes (continued):

		1**	2**	3**	4**	5**
Even distribution on hair	#	6	2	3	3	0
	%	42.9	14.3	21.4	21.4	0.0
	wt%	48.2	10.4	24.5	16.8	0.0
Leaves no sticky residue	#	2	3	4	3	2
	%	14.3	21.4	28.6	21.4	14.3
	wt%	13.9	24.5	32.5	18.7	10.4

#15) Comparing your type of dispenser to the alternate, your type is:

		1***	2***	3***	4***	5***
Holding power	#	3	4	5	2	0
	%	21.4	28.6	35.7	14.3	0.0
	wt%	16.8	26.7	44.2	12.3	0.0
Dispenses from any angle	#	3	3	7	0	1
	%	21.4	21.4	50.0	0.0	7.1
	wt%	16.8	20.3	56.5	0.0	6.4
Leak proof	#	3	3	7	0	1
	%	21.4	21.4	50.0	0.0	7.1
	wt%	16.8	23.7	49.6	0.0	9.9
Easily shampoos out	#	0	3	9	2	0
	%	0.0	21.4	64.3	14.3	0.0
	wt%	0.0	26.1	59.2	14.6	0.0
Explosion proof	#	0	3	7	1	2
	%	0.0	23.1	53.8	7.7	15.4
	wt%	0.0	25.2	58.8	7.1	8.9
Odor free	#	2	1	7	3	1
	%	14.3	7.1	50.0	21.4	7.1
	wt%	12.8	9.9	50.4	18.7	8.2
Safe for the environment	#	1	2	7	2	0
	%	8.3	16.7	58.3	16.7	0.0
	wt%	7.4	18.9	61.6	12.1	0.0
No overcap needed	#	1	2	6	3	1
	%	7.7	15.4	46.2	23.1	7.7
	wt%	4.3	11.1	48.7	25.4	10.5
Price	#	0	3	9	2	0
	%	0.0	21.4	64.3	14.3	0.0
	wt%	0.0	26.1	59.2	14.6	0.0

TABLE 16 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN AEROSOL USERS

#15) Comparing your type of dispenser to the alternate, your type is:
(continued):

		1***	2***	3***	4***	5***
Combs out easily	#	0	3	8	1	1
	%	0.0	23.1	61.5	7.7	7.7
	wt%	0.0	21.7	62.7	8.8	6.8
Dries quickly	#	3	6	4	1	0
	%	21.4	42.9	28.6	7.1	0.0
	wt%	16.8	41.3	33.6	8.2	0.0
Feels natural	#	1	2	9	2	0
	%	7.1	14.3	64.3	14.3	0.0
	wt%	6.4	10.4	65.1	18.1	0.0
Contains no alcohol	#	0	1	12	0	0
	%	0.0	7.7	92.3	0.0	0.0
	wt%	0.0	6.7	93.3	0.0	0.0
Fragrance	#	3	2	5	2	1
	%	23.1	15.4	38.5	15.4	7.7
	wt%	18.0	19.3	42.7	11.1	8.8
Even distribution on hair	#	1	4	8	1	0
	%	7.1	28.6	57.1	7.1	0.0
	wt%	4.0	29.1	57.0	9.9	0.0
Leaves no sticky residue	#	2	2	6	3	1
	%	14.3	14.3	42.9	21.4	7.1
	wt%	13.9	10.4	44.8	24.5	6.4

#16) Overall, which type of dispenser do you like best, aerosol or pump?

	#	%	wt%
aerosol	7	50.0	49.4
pump	7	50.0	50.6

#17) Rate your satisfaction with PATTERNS on the following attributes

		1**	2**	3**	4**	5**
Holding power	#	5	5	2	1	2
	%	33.3	33.3	13.3	6.7	13.3
	wt%	41.6	33.4	13.8	3.8	7.5
Dispenses from any angle	#	3	5	5	2	0
	%	20.0	33.3	33.3	13.3	0.0
	wt%	22.3	35.1	32.8	9.8	0.0
Leak proof	#	7	3	4	1	0
	%	46.7	20.0	26.7	6.7	0.0
	wt%	49.6	20.8	21.8	7.7	0.0

TABLE 16 (continued):
QUESTIONNAIRE RESPONSES
FEMALE TEEN AEROSOL USERS

#17) Rate your satisfaction with PATTERNS on the following attributes
(continued):

		1**	2**	3**	4**	5**
Easily shampoos out	#	6	6	2	1	0
	%	40.0	40.0	13.3	6.7	0.0
	wt%	43.6	37.1	11.5	7.7	0.0
Explosion proof	#	4	3	5	0	1
	%	30.8	23.1	38.5	0.0	7.7
	wt%	39.4	23.6	32.8	0.0	4.2
Odor free	#	2	2	3	3	5
	%	13.3	13.3	20.0	20.0	33.3
	wt%	15.3	12.0	21.3	24.6	26.8
Safe for the environment	#	2	1	7	2	0
	%	16.7	8.3	58.3	16.7	0.0
	wt%	18.9	7.4	54.5	19.1	0.0
No overcap needed	#	3	3	6	2	0
	%	21.4	21.4	42.9	14.3	0.0
	wt%	23.5	18.5	40.9	17.1	0.0
Price	#	0	1	2	0	0
	%	0.0	33.3	66.7	0.0	0.0
	wt%	0.0	33.3	66.7	0.0	0.0
Combs out easily	#	6	3	4	1	1
	%	40.0	20.0	26.7	6.7	6.7
	wt%	46.9	18.1	23.6	3.8	7.7
Dries quickly	#	2	3	8	0	2
	%	13.3	20.0	53.3	0.0	13.3
	wt%	18.5	19.1	50.9	0.0	11.5
Feels natural	#	1	6	6	2	0
	%	6.7	40.0	40.0	13.3	0.0
	wt%	9.3	43.6	35.6	11.5	0.0
Contains no alcohol	#	0	1	9	1	1
	%	0.0	8.3	75.0	8.3	8.3
	wt%	0.0	11.4	69.4	9.6	9.6
Fragrance	#	4	4	2	1	4
	%	26.7	26.7	13.3	6.7	26.7
	wt%	30.6	30.6	12.0	3.8	23.0
Even distribution on hair	#	6	4	4	0	1
	%	40.0	26.7	26.7	0.0	6.7
	wt%	47.6	25.1	23.6	0.0	3.8
Leaves no sticky residue	#	3	4	3	4	1
	%	20.0	26.7	20.0	26.7	6.7
	wt%	24.6	25.1	21.3	25.3	3.8

TABLE 16 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN AEROSOL USERS

#18) Rank order of products tested for specified attributes

	own brand			alternate			PATTERNS		
#18a) holding power	#	%	wt%	#	%	wt%	#	%	wt%
liked best	8	17.8	16.2	2	4.4	4.3	5	11.1	12.8
neutral	6	13.3	14.5	7	15.6	14.8	3	6.7	7.1
liked least	1	2.2	2.6	6	13.3	14.2	7	15.6	13.5
#18b) dispenses from any angle	#	%	wt%	#	%	wt%	#	%	wt%
liked best	8	17.8	16.7	2	4.4	4.3	5	11.1	12.3
neutral	7	15.6	16.6	7	15.6	14.8	3	6.7	7.1
liked least	0	0.0	0.0	6	13.3	14.2	7	15.6	14.0
#18c) leak proof	#	%	wt%	#	%	wt%	#	%	wt%
liked best	4	8.9	8.2	4	8.9	8.9	6	13.3	14.3
neutral	6	13.3	15.4	3	6.7	6.0	5	11.1	10.6
liked least	5	11.1	2.6	8	17.8	16.6	4	8.9	17.4
#18d) easily shampoos out	#	%	wt%	#	%	wt%	#	%	wt%
liked best	3	6.7	6.0	3	6.7	7.4	7	15.6	14.7
neutral	7	15.6	18.2	6	13.3	11.1	3	6.7	6.6
liked least	5	11.1	9.1	6	13.3	14.8	5	11.1	12.0
#18e) explosion proof	#	%	wt%	#	%	wt%	#	%	wt%
liked best	3	9.1	7.0	1	3.0	1.7	4	12.1	13.6
neutral	4	12.1	12.9	5	15.2	16.0	4	12.1	11.2
liked least	4	12.1	13.4	5	15.2	15.6	3	9.1	8.5
#18f) odor free	#	%	wt%	#	%	wt%	#	%	wt%
liked best	2	4.4	4.0	3	6.7	3.8	6	13.3	14.2
neutral	6	13.3	12.0	8	17.8	19.3	1	2.2	3.1
liked least	7	15.6	17.4	4	8.9	10.3	8	17.8	16.0
#18g) safer for environment	#	%	wt%	#	%	wt%	#	%	wt%
liked best	1	3.0	2.7	2	6.1	5.8	6	18.2	18.0
neutral	3	9.1	8.5	5	15.2	13.8	1	3.0	3.4
liked least	7	21.2	22.2	4	12.1	13.7	4	12.1	11.9
#18h) no overcap needed	#	%	wt%	#	%	wt%	#	%	wt%
liked best	3	6.7	5.3	3	6.7	9.3	7	15.6	13.6
neutral	6	13.3	14.8	5	11.1	9.1	5	11.1	11.5
liked least	6	13.3	13.3	7	15.6	15.0	3	6.7	8.2

TABLE 16 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN AEROSOL USERS

#18) Rank order of products tested for specified attributes
(continued):

	own brand			alternate			PATTERNS		
#18i) price	#	%	wt%	#	%	wt%	#	%	wt%
liked best	3	11.5	10.7	1	3.8	2.0	3	11.5	13.3
neutral	4	15.4	16.3	5	19.2	21.7	4	15.4	14.0
liked least	2	7.7	8.3	3	11.5	11.6	1	3.8	2.0
#18j) combs out easily	#	%	wt%	#	%	wt%	#	%	wt%
liked best	3	6.7	5.3	4	8.9	9.4	6	13.3	13.5
neutral	7	15.6	16.0	6	13.3	12.2	1	2.2	2.0
liked least	5	11.1	12.0	5	11.1	11.7	8	17.8	17.9
#18k) dries quickly	#	%	wt%	#	%	wt%	#	%	wt%
liked best	6	13.3	12.4	4	8.9	9.4	2	4.4	4.3
neutral	5	11.1	11.5	5	11.1	11.5	9	20.0	19.0
liked least	4	8.9	9.4	6	13.3	12.4	4	8.9	10.0
#18l) feels natural	#	%	wt%	#	%	wt%	#	%	wt%
liked best	5	11.1	11.7	5	11.1	11.3	5	11.1	10.4
neutral	5	11.1	10.4	3	6.7	6.4	5	11.1	10.9
liked least	5	11.1	11.3	7	15.6	15.7	5	11.1	12.0
#18m) contains no alcohol	#	%	wt%	#	%	wt%	#	%	wt%
liked best	2	6.1	6.8	2	6.1	6.8	3	9.1	8.5
neutral	1	3.0	3.4	6	18.2	16.3	4	12.1	11.2
liked least	8	24.2	23.1	3	9.1	10.2	4	12.1	13.7
#18n) fragrance	#	%	wt%	#	%	wt%	#	%	wt%
liked best	5	11.1	9.1	3	6.7	6.9	7	15.6	17.3
neutral	4	8.9	9.4	9	20.0	18.7	1	2.2	3.1
liked least	6	13.3	14.8	3	6.7	7.7	7	15.6	12.9
#18o) even distribution on hair	#	%	wt%	#	%	wt%	#	%	wt%
liked best	6	13.3	11.1	5	11.1	13.3	9	20.0	20.6
neutral	7	15.6	16.0	2	4.4	5.1	3	6.7	4.5
liked least	2	4.4	6.2	8	17.8	14.9	3	6.7	8.2
#18p) leaves no sticky residue	#	%	wt%	#	%	wt%	#	%	wt%
liked best	5	11.1	9.9	4	8.9	8.7	5	11.1	12.8
neutral	7	15.6	16.0	5	11.1	11.5	6	13.3	12.4
liked least	3	6.7	7.4	6	13.3	13.1	4	8.9	8.2

TABLE 16 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN AEROSOL USERS

#19) Overall, which product did you like most?

	#	%	wt%
my brand	3	20.0	15.8
alternate version	4	26.7	24.6
PATTERNS	8	53.3	59.6

#19a) Why?

	#	%	wt%
hold	6	40.0	34.9
doesn't dry hair	1	6.7	6.0
dispenser	4	26.7	32.3
scent	11	73.3	75.4
other	8	53.3	59.1

#20) Overall, which product did you like least?

	#	%	wt%
my brand	1	6.7	7.7
alternate version	7	46.7	51.9
PATTERNS	7	46.7	40.4

#20a) Why?

	#	%	wt%
dislike container	1	6.7	6.0
dispensing uneven spray	4	26.7	25.1
scent	7	46.7	49.8
irritated skin	0	0.0	0.0
hold	5	33.3	23.4
sticky	4	26.7	26.8
didn't wash out easily	0	0.0	0.0
other	7	46.7	53.6

#21) Were you aware that PATTERNS was neither an aerosol or pump?

	#	%	wt%
yes	10	66.7	63.9
no	5	33.3	36.1

#22) How likely would you be to purchase PATTERNS at the same price as your own brand?

	#	%	wt%
very likely	4	26.7	30.6
somewhat likely	2	13.3	15.3
neutral	4	26.7	29.1
somewhat unlikely	4	26.7	21.3
definitely not	1	6.7	3.8

#22a) Why?

	#	%	wt%		#	%	wt%
easy to use	0	0.0	0.0	hair condition	0	0.0	0.0
like it	2	13.3	15.3	hold	1	6.7	3.8
container itself	2	13.3	17.0	other	11	73.3	71.7
scent	3	20.0	23.0				

TABLE 16 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN AEROSOL USERS

#23) Would you pay more for PATTERNS than your own hair spray?

	#	%	wt%
yes	4	26.7	30.6
no	11	73.3	69.4

#24) If PATTERNS retailed for \$5.00 per container, would you say that price is...

	#	%	wt%
too high	9	60.0	50.9
just about right	6	40.0	49.1
not enough	0	0.0	0.0

#25) Which type of dispenser do you like best?

	#	%	wt%
pump	3	21.4	19.2
aerosol	1	7.1	4.0
PATTERNS	10	71.4	76.8

KEY TO MULTIPLE CHOICE QUESTIONS

#7	#8, #14, #17	#15
1* Very Important	1** Excellent	1*** Much Better
2* Somewhat Important	2** Very Good	2*** Somewhat Better
3* Important	3** Good	3*** Same
4* Somewhat Unimportant	4** Poor	4*** Somewhat Worse
5* Not at all Important	5** Very Poor	5*** Much Worse

TABLE 16 (continued)
 QUESTIONNAIRE RESPONSES
 FEMALE TEEN AEROSOL USERS

DEMOGRAPHICS

SEX	#	%	wt%
male	0	0.0	0.0
female	15	100.0	100.0

MARITAL STATUS	#	%	wt%
married	0	0.0	0.0
single	15	100.0	100.0
other	0	0.0	0.0

AGE BRACKET	#	%	wt%
18 or under	15	100.0	100.0
19 - 24	0	0.0	0.0
25 - 34	0	0.0	0.0
35 - 44	0	0.0	0.0
45 - 54	0	0.0	0.0
over 55	0	0.0	0.0

NUMBER OF PEOPLE IN HOUSEHOLD	#	%	wt%
one	0	0.0	0.0
two	0	0.0	0.0
three or more	15	100.0	100.0

HIGHEST LEVEL OF EDUCATION COMPLETED	#	%	wt%
some high school or less	11	73.3	75.4
high school graduate, no college	4	26.7	24.6
some college	0	0.0	0.0
trade/vocational school	0	0.0	0.0
college graduate	0	0.0	0.0
post graduate study	0	0.0	0.0
post graduate degree	0	0.0	0.0

POSITION IN FAMILY	#	%	wt%
one person household	0	0.0	0.0
head of family	0	0.0	0.0
spouse of head of family	0	0.0	0.0
son/daughter of head of family	15	100.0	100.0
other	0	0.0	0.0

TABLE 17
QUESTIONNAIRE RESPONSES
FEMALE ADULT PUMP USERS

#1) How long have you been using your brand of hair spray?

	#	%	wt%
less than 1 year	25	40.3	37.6
1-4 years	35	56.5	60.0
> 5 years	2	3.2	2.4

#2) What do you particularly like about your brand of hair spray?

	#	%	wt%
hold	41	62.1	64.6
scent	19	28.8	25.5
not too sticky	17	25.8	21.0
long lasting effect	5	7.6	7.8
dries quickly	0	0.0	0.0
easy to style	0	0.0	0.0
recommended by someone	2	3.0	2.5
leaves hair soft, not too stiff	6	9.1	7.7
fairly priced	8	12.1	16.7
other	25	37.9	40.4

#3) What do you particularly dislike about your brand of hair spray?

	#	%	wt%
hold	10	20.8	18.0
wet, stiff looking	6	12.5	14.5
must use alot	0	0.0	0.0
sticky	6	12.5	13.1
itchy scalp	2	4.2	4.8
too much perfume	1	2.1	1.4
scent or smell	12	25.0	27.7
poor packaging	3	6.3	4.2
cost	2	4.2	3.5
other	21	43.8	42.6

#4) What is your main reason for purchasing your brand of hair spray?

	#	%	wt%
hold	23	34.3	32.2
smell or scent	5	7.5	6.9
availability	2	3.0	3.9
advertising	1	1.5	1.0
habit	2	3.0	3.7
cost	16	23.9	29.7
recommended	8	11.9	12.2
minimal damage to hair	0	0.0	0.0
looks natural	2	3.0	1.9
other	32	47.8	46.5

#5) How many brands of hair spray do you currently use?

	#	%	wt%
one	42	67.7	70.5
two	16	25.8	21.8
three or more	4	6.5	7.8

TABLE 17 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT PUMP USERS

#6) If your brand was not on the market, which brand would you use?

	#	%	wt%
pump to pump	54	81.8	79.8
pump to aerosol	12	18.2	20.2
aerosol to aerosol	0	0.0	0.0
aerosol to pump	0	0.0	0.0

#7) Rate the following attributes according to importance in your decision to purchase a hair spray:

		1*	2*	3*	4*	5*
Holding power	#	55	8	5	1	0
	%	79.7	11.6	7.2	1.4	0.0
	wt%	81.4	11.5	6.2	0.9	0.0
Dispenses from any angle	#	14	9	13	16	16
	%	20.6	13.2	19.1	23.5	23.5
	wt%	22.3	11.9	19.1	22.6	24.1
Leak proof	#	39	9	14	5	2
	%	56.5	13.0	20.3	7.2	2.9
	wt%	57.3	12.2	19.9	8.2	2.4
Easily shampoos out	#	42	12	13	2	0
	%	60.9	17.4	18.8	2.9	0.0
	wt%	61.9	16.5	17.7	3.8	0.0
Explosion proof	#	36	8	10	10	3
	%	53.7	11.9	14.9	14.9	4.5
	wt%	58.2	10.3	13.9	13.2	4.4
Odor free	#	33	13	11	7	5
	%	47.8	18.8	15.9	10.1	7.2
	wt%	44.4	18.2	17.5	11.3	8.6
Safe for the environment	#	38	15	7	6	3
	%	55.1	21.7	10.1	8.7	4.3
	wt%	57.1	18.1	11.4	7.7	5.7
No overcap needed	#	13	12	9	21	14
	%	18.8	17.4	13.0	30.4	20.3
	wt%	19.6	17.2	16.5	30.3	16.3
Price	#	13	25	17	2	10
	%	19.4	37.3	25.4	3.0	14.9
	wt%	23.9	33.9	24.9	2.5	14.8
Combs out easily	#	31	17	16	3	2
	%	44.9	24.6	23.2	4.3	2.9
	wt%	44.7	22.5	23.3	4.8	4.8
Dries quickly	#	34	20	10	3	1
	%	50.0	29.4	14.7	4.4	1.5
	wt%	50.8	29.4	12.5	4.8	2.4

TABLE 17 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT PUMP USERS

#7) CONTINUED:

Feels natural	#	37	14	12	4	2
	%	53.6	20.3	17.4	5.8	2.9
	wt%	50.8	20.1	19.6	5.7	3.8
Contains no alcohol	#	21	17	16	9	6
	%	30.4	24.6	23.2	13.0	8.7
	wt%	30.1	20.6	25.6	12.9	10.8
Fragrance	#	25	10	12	6	9
	%	40.3	16.1	19.4	9.7	14.5
	wt%	39.4	16.4	21.0	10.0	13.2
Even distribution on hair	#	31	16	12	2	2
	%	49.2	25.4	19.0	3.2	3.2
	wt%	47.9	26.1	18.8	2.1	5.2
Leaves no sticky residue	#	39	11	10	2	1
	%	61.9	17.5	15.9	3.2	1.6
	wt%	59.5	16.5	18.8	2.6	2.6

#8) Rate the performance of YOUR hair spray on the following attributes:

		1**	2**	3**	4**	5**
Holding power	#	29	25	15	0	0
	%	42.0	36.2	21.7	0.0	0.0
	wt%	45.8	34.0	20.1	0.0	0.0
Dispenses from any angle	#	9	16	31	6	3
	%	13.8	24.6	47.7	9.2	4.6
	wt%	13.9	23.9	49.0	7.2	6.1
Leak proof	#	17	23	17	7	5
	%	24.6	33.3	24.6	10.1	7.2
	wt%	25.5	31.4	26.8	8.6	7.6
Easily shampoos out	#	33	23	12	0	1
	%	47.8	33.3	17.4	0.0	1.4
	wt%	49.2	34.8	15.1	0.0	1.0
Explosion proof	#	33	12	14	1	0
	%	55.0	20.0	23.3	1.7	0.0
	wt%	55.3	20.5	23.2	1.1	0.0
Odor free	#	15	15	16	11	7
	%	23.4	23.4	25.0	17.2	10.9
	wt%	20.6	20.9	26.9	20.3	11.3
Safe for the environment	#	25	17	18	0	1
	%	41.0	27.9	29.5	0.0	1.6
	wt%	43.8	24.8	28.8	0.0	2.7

TABLE 17 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT PUMP USERS

#8) CONTINUED:

No overcap needed	#	16	13	18	12	5
	%	25.0	20.3	28.1	18.8	7.8
	wt%	30.5	18.8	26.1	15.0	9.6
Price	#	12	17	34	6	0
	%	17.4	24.6	49.3	8.7	0.0
	wt%	24.6	25.6	42.0	7.7	0.0
Combs out easily	#	19	27	16	4	2
	%	27.9	39.7	23.5	5.9	2.9
	wt%	28.1	38.6	23.0	8.3	2.0
Dries quickly	#	28	25	13	2	1
	%	40.6	36.2	18.8	2.9	1.4
	wt%	43.5	34.9	18.2	2.4	1.0
Feels natural	#	16	23	18	9	3
	%	23.2	33.3	26.1	13.0	4.3
	wt%	19.4	36.1	26.4	12.4	5.7
Contains no alcohol	#	6	10	27	7	4
	%	11.1	18.5	50.0	13.0	7.4
	wt%	9.3	20.0	47.8	15.2	7.7
Fragrance	#	18	16	14	6	7
	%	29.5	26.2	23.0	9.8	11.5
	wt%	29.1	26.0	22.4	11.2	11.3
Even distribution on hair	#	16	20	23	1	2
	%	25.8	32.3	37.1	1.6	3.2
	wt%	28.7	33.1	33.4	1.0	3.7
Leaves no sticky residue	#	16	16	21	8	2
	%	25.4	25.4	33.3	12.7	3.2
	wt%	24.2	24.6	33.3	14.1	3.7

#9) How many cans of hair spray do you use each month?

	#	%	wt%
<1	40	63.5	60.4
1	16	25.4	28.0
2	5	7.9	7.4
3	2	3.2	4.2
4	0	0.0	0.0
5	0	0.0	0.0

TABLE 17 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT PUMP USERS

#10) How much do you pay for your brand of hair spray?

	#	%	wt%		#	%	wt%
less than \$1.00	0	0.0	0.0	\$5.01-\$5.50	2	2.9	2.4
\$1.01-\$1.50	0	0.0	0.0	\$5.51-\$6.00	4	5.9	5.4
\$1.51-\$2.00	8	11.8	14.0	\$6.01-\$6.50	3	4.4	4.4
\$2.01-\$2.51	9	13.2	13.9	\$6.51-\$7.00	0	0.0	0.0
\$2.51-\$3.00	19	27.9	26.7	\$7.01-\$7.50	1	1.5	1.5
\$3.01-\$3.50	8	11.8	9.2	\$7.51-\$8.00	0	0.0	0.0
\$3.51-\$4.00	11	16.2	17.0	\$8.01-\$8.50	0	0.0	0.0
\$4.01-\$4.50	2	2.9	3.9	\$8.51-\$9.00	0	0.0	0.0
\$4.51-\$5.00	1	1.5	1.5	over \$9.00	0	0.0	0.0

#10a) Who decides the brand of hair spray you use?

	#	%	wt%
self	68	98.6	98.6
mother	0	0.0	0.0
father	0	0.0	0.0
spouse	0	0.0	0.0
hairstylist	1	1.4	1.4
other	0	0.0	0.0

#12) What do you like about your alternate hair spray?

	#	%	wt%
hold	10	21.7	22.1
dispenser itself	8	17.4	14.3
even coverage	8	17.4	16.7
scent	11	23.9	21.3
leak proof	2	4.3	4.8
other	23	50.0	56.4

#13) What do you dislike about your alternate hair spray?

	#	%	wt%
leaks	2	3.4	2.2
uneven spray	4	6.8	6.6
scent	10	16.9	20.3
scalp irritation	0	0.0	0.0
dulls hair	0	0.0	0.0
hold	24	40.7	39.2
wet or sticky	8	13.6	11.5
other	40	67.8	70.2

#14) Rate your satisfaction with this alternate form on the following attributes:

		1**	2**	3**	4**	5**
Holding power	#	14	12	15	20	7
	%	20.6	17.6	22.1	29.4	10.3
	wt%	22.6	17.4	19.2	32.2	8.6

TABLE 17 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT PUMP USERS

#14) CONTINUED:

Dispenses from any angle	#	18	15	20	11	2
	%	27.3	22.7	30.3	16.7	3.0
	wt%	28.1	21.5	34.0	14.4	2.0
Leak proof	#	29	13	21	2	1
	%	43.9	19.7	31.8	3.0	1.5
	wt%	47.7	17.4	31.9	2.0	1.0
Easily shampoos out	#	19	26	14	7	2
	%	27.9	38.2	20.6	10.3	2.9
	wt%	29.0	36.9	21.1	10.6	2.4
Explosion proof	#	2	7	19	15	8
	%	3.9	13.7	37.3	29.4	15.7
	wt%	4.4	12.6	31.8	34.4	16.8
Odor free	#	2	9	26	20	7
	%	3.1	14.1	40.6	31.3	10.9
	wt%	4.1	13.9	39.2	32.1	10.8
Safe for the environment	#	5	6	14	15	19
	%	8.5	10.2	23.7	25.4	32.2
	wt%	12.6	10.4	22.3	26.3	28.3
No overcap needed	#	6	8	28	13	9
	%	9.4	12.5	43.8	20.3	14.1
	wt%	11.6	12.5	46.8	17.0	12.1
Price	#	3	10	44	5	3
	%	4.6	15.4	67.7	7.7	4.6
	wt%	7.4	13.9	65.7	9.5	3.5
Combs out easily	#	10	16	22	15	4
	%	14.9	23.9	32.8	22.4	6.0
	wt%	15.1	20.7	32.9	25.4	5.9
Dries quickly	#	12	19	28	8	1
	%	17.6	27.9	41.2	11.8	1.5
	wt%	17.4	29.0	42.0	10.1	1.5
Feels natural	#	13	13	21	17	4
	%	19.1	19.1	30.9	25.0	5.9
	wt%	17.3	17.4	32.5	27.1	5.8
Contains no alcohol	#	2	5	19	16	6
	%	4.2	10.4	39.6	33.3	12.5
	wt%	4.5	8.9	41.5	33.5	11.6
Fragrance	#	7	8	30	14	8
	%	10.4	11.9	44.8	20.9	11.9
	wt%	12.5	11.3	41.6	23.4	11.2

TABLE 17 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT PUMP USERS

#14) CONTINUED:

Even distribution on hair	#	16	17	25	8	2
	%	23.5	25.0	36.8	11.8	2.9
	wt%	27.1	23.0	33.5	14.0	2.4
Leaves no sticky residue	#	6	11	26	20	5
	%	8.8	16.2	38.2	29.4	7.4
	wt%	9.7	12.7	37.5	33.3	6.8

#15) Comparing your type of dispenser to the alternate, your type is:

		1***	2***	3***	4***	5***
Holding power	#	35	17	8	6	1
	%	52.2	25.4	11.9	9.0	1.5
	wt%	53.3	27.4	9.7	8.1	1.5
Dispenses from any angle	#	18	18	21	9	2
	%	26.5	26.5	30.9	13.2	2.9
	wt%	31.4	23.9	30.6	10.2	3.9
Leak proof	#	15	7	29	13	3
	%	22.4	10.4	43.3	19.4	4.5
	wt%	23.7	10.4	42.8	18.2	5.0
Easily shampoos out	#	19	12	30	5	1
	%	28.4	17.9	44.8	7.5	1.5
	wt%	30.9	17.6	40.7	9.3	1.5
Explosion proof	#	20	10	23	4	4
	%	32.8	16.4	37.7	6.6	6.6
	wt%	37.4	13.8	36.0	7.4	5.3
Odor free	#	16	10	34	3	2
	%	24.6	15.4	52.3	4.6	3.1
	wt%	25.8	14.7	51.2	4.9	3.5
Safe for the environment	#	26	13	14	5	5
	%	41.3	20.6	22.2	7.9	7.9
	wt%	47.0	17.4	21.7	7.6	6.2
No overcap needed	#	16	9	24	4	2
	%	29.1	16.4	43.6	7.3	3.6
	wt%	34.5	13.7	41.1	6.0	4.8
Price	#	8	10	38	7	2
	%	12.3	15.4	58.5	10.8	3.1
	wt%	14.4	15.9	56.3	10.0	3.5
Combs out easily	#	11	18	17	8	0
	%	20.4	33.3	31.5	14.8	0.0
	wt%	24.2	29.7	29.9	16.1	0.0

TABLE 17 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT PUMP USERS

#15) CONTINUED:

Dries quickly	#	16	17	23	12	0
	%	23.5	25.0	33.8	17.6	0.0
	wt%	29.5	24.0	29.5	17.1	0.0
Feels natural	#	14	21	15	15	2
	%	20.9	31.3	22.4	22.4	3.0
	wt%	21.5	33.0	20.8	21.7	3.0
Contains no alcohol	#	6	5	40	4	0
	%	10.9	9.1	72.7	7.3	0.0
	wt%	11.5	11.0	71.8	5.7	0.0
Fragrance	#	14	12	25	1	1
	%	26.4	22.6	47.2	1.9	1.9
	wt%	24.9	21.3	47.6	3.1	3.1
Even distribution on hair	#	23	19	13	13	0
	%	33.8	27.9	19.1	19.1	0.0
	wt%	37.2	25.5	17.2	20.1	0.0
Leaves no sticky residue	#	16	16	20	15	1
	%	23.5	23.5	29.4	22.1	1.5
	wt%	25.2	22.7	27.8	21.9	2.4

#16) Overall, which type of dispenser do you like best, aerosol or pump?

	#	%	wt%
aerosol	21	30.9	28.8
pump	47	69.1	71.2

#17) Rate your satisfaction with PATTERNS on the following attributes

		1**	2**	3**	4**	5**
Holding power	#	16	18	14	15	5
	%	23.5	26.5	20.6	22.1	7.4
	wt%	25.6	25.4	21.6	19.2	8.2
Dispenses from any angle	#	26	18	23	2	0
	%	37.7	26.1	33.3	2.9	0.0
	wt%	40.8	25.3	31.6	2.2	0.0
Leak proof	#	29	23	12	3	1
	%	42.6	33.8	17.6	4.4	1.5
	wt%	45.6	30.9	17.9	4.6	1.0
Easily shampoos out	#	23	23	20	3	0
	%	33.3	33.3	29.0	4.3	0.0
	wt%	35.4	31.4	29.3	3.9	0.0
Explosion proof	#	19	16	18	4	2
	%	32.2	27.1	30.5	6.8	3.4
	wt%	33.2	26.5	26.5	9.4	4.5

TABLE 17 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT PUMP USERS

#15) CONTINUED:

Odor free	#	4	10	15	21	15
	%	6.2	15.4	23.1	32.3	23.1
	wt%	8.1	17.6	21.3	30.6	22.3
Safe for the environment	#	20	12	23	2	2
	%	33.9	20.3	39.0	3.4	3.4
	wt%	36.8	20.8	36.3	2.2	3.8
No overcap needed	#	10	14	33	4	2
	%	15.9	22.2	52.4	6.3	3.2
	wt%	17.2	25.2	49.9	4.1	3.7
Price	#	0	4	16	4	0
	%	0.0	16.7	66.7	16.7	0.0
	wt%	0.0	16.5	68.5	15.0	0.0
Combs out easily	#	16	17	26	8	1
	%	23.5	25.0	38.2	11.8	1.5
	wt%	22.5	22.5	40.4	12.1	2.4
Dries quickly	#	12	18	20	12	7
	%	17.4	26.1	29.0	17.4	10.1
	wt%	17.2	23.6	35.0	16.1	8.1
Feels natural	#	17	15	24	8	4
	%	25.0	22.1	35.3	11.8	5.9
	wt%	26.0	22.2	34.3	11.7	5.9
Contains no alcohol	#	5	11	19	8	5
	%	10.4	22.9	39.6	16.7	10.4
	wt%	11.8	23.6	38.0	16.2	10.4
Fragrance	#	6	9	19	16	17
	%	9.0	13.4	28.4	23.9	25.4
	wt%	13.8	15.0	25.8	21.1	24.3
Even distribution on hair	#	24	15	24	5	1
	%	34.8	21.7	34.8	7.2	1.4
	wt%	41.7	18.7	33.6	5.1	0.9
Leaves no sticky residue	#	15	17	21	13	3
	%	21.7	24.6	30.4	18.8	4.3
	wt%	25.8	23.6	28.8	17.1	4.8

#18) Rank order of products tested for specified attributes

	own brand			alternate			PATTERNS		
#18a) holding power	#	%	wt%	#	%	wt%	#	%	wt%
liked best	40	19.5	19.7	12	5.9	6.0	15	7.3	7.4
neutral	23	11.2	11.2	18	8.8	8.5	29	14.1	14.2
liked least	6	2.9	2.7	38	18.5	18.6	24	11.7	11.6

TABLE 17 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT PUMP USERS

#18) CONTINUED:

#18b) dispenses from any angle

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	16	7.9	6.7	15	7.4	7.2	40	19.7	20.7
neutral	38	18.7	19.9	16	7.9	7.9	15	7.4	6.8
liked least	13	6.4	6.3	37	18.2	18.3	13	6.4	6.1

#18c) leak proof

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	14	7.2	6.9	15	7.7	6.9	32	16.5	17.9
neutral	32	16.5	16.1	20	10.3	9.9	24	12.4	10.4
liked least	19	9.8	6.3	29	14.9	19.2	9	4.6	6.5

#18d) easily shampoos out

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	32	15.8	14.0	10	5.0	4.3	30	14.9	16.3
neutral	25	12.4	14.8	24	11.9	11.5	20	9.9	8.6
liked least	11	5.4	5.0	33	16.3	17.2	17	8.4	8.2

#18e) explosion proof

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	38	21.5	21.3	4	2.3	1.6	17	9.6	9.2
neutral	14	7.9	8.7	18	10.2	10.2	32	18.1	17.8
liked least	7	4.0	3.4	36	20.3	21.1	11	6.2	6.7

#18f) odor free

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	34	17.0	15.9	12	6.0	5.4	18	9.0	10.5
neutral	21	10.5	11.6	34	17.0	17.2	15	7.5	6.9
liked least	12	6.0	6.1	20	10.0	10.4	34	17.0	16.1

#18g) safer for environment

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	35	19.1	18.6	6	3.3	2.2	22	12.0	12.5
neutral	18	9.8	11.5	16	8.7	8.7	33	18.0	17.3
liked least	8	4.4	3.3	38	20.8	22.0	7	3.8	3.9

#18h) no overcap needed

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	26	14.1	14.0	4	2.2	2.0	28	15.1	15.3
neutral	24	13.0	13.8	33	17.8	17.7	24	13.0	11.8
liked least	11	5.9	5.2	24	13.0	13.3	11	5.9	6.9

#18i) price

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	29	19.5	20.6	6	4.0	4.0	13	8.7	7.1
neutral	12	8.1	7.5	30	20.1	22.0	21	14.1	13.5
liked least	10	6.7	6.5	14	9.4	8.0	14	9.4	10.8

#18j) combs out easily

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	28	14.1	13.2	8	4.0	3.8	31	15.7	17.5
neutral	25	12.6	14.3	26	13.1	11.7	19	9.6	8.1
liked least	12	6.1	5.5	31	15.7	17.5	18	9.1	8.5
no response	4	5.8	5.7	4	5.8	5.7	1	1.4	2.4

TABLE 17 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT PUMP USERS

#18) CONTINUED:

#18k) dries quickly

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	29	14.6	13.3	19	9.6	9.3	21	10.6	12.0
neutral	29	14.6	17.0	19	9.6	8.2	19	9.6	9.2
liked least	8	4.0	3.1	27	13.6	15.5	27	13.6	12.5

#18l) feels natural

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	27	13.8	12.8	11	5.6	5.2	32	16.4	17.2
neutral	24	12.3	13.7	23	11.8	11.4	20	10.3	9.5
liked least	13	6.7	6.4	31	15.9	16.8	14	7.2	6.9

#18m) contains no alcohol

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	22	14.0	13.5	5	3.2	2.2	16	10.2	10.7
neutral	19	12.1	13.6	18	11.5	11.6	24	15.3	13.4
liked least	12	7.6	6.8	29	18.5	19.5	12	7.6	8.7

#18n) fragrance

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	34	17.3	16.0	12	6.1	6.0	16	8.2	9.6
neutral	22	11.2	12.9	30	15.3	15.0	17	8.7	8.3
liked least	10	5.1	4.7	23	11.7	12.2	32	16.3	15.2

#18o) even distribution on hair

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	20	10.1	9.7	15	7.6	7.5	35	17.7	18.8
neutral	29	14.6	16.1	17	8.6	6.4	23	11.6	11.2
liked least	16	8.1	7.2	33	16.7	18.7	10	5.1	4.4

#18p) leaves no sticky residue

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	27	13.6	11.9	10	5.0	4.3	31	15.6	17.3
neutral	27	13.6	16.0	24	12.1	10.6	22	11.1	10.1
liked least	12	6.0	5.5	31	15.6	17.6	15	7.5	6.7
no response	3	4.3	4.8	4	5.8	7.2	1	1.4	2.4

#19) Overall, which product did you like most?

	#	%	wt%
my brand	38	55.1	52.7
alternate version	11	15.9	17.2
PATTERNS	20	29.0	30.1

#19a) Why?

	#	%	wt%
hold	43	63.2	64.8
doesn't dry hair	1	1.5	1.5
dispenser	13	19.1	19.9
scent	27	39.7	39.2
other	47	69.1	68.7

TABLE 17 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT PUMP USERS

#20) Overall, which product did you like least?

	#	%	wt%
my brand	4	5.9	5.3
alternate version	35	51.5	53.7
PATTERNS	29	42.6	41.0

#20a) Why?

	#	%	wt%
dislike container	12	17.9	21.4
dispensing uneven spray	8	11.9	12.6
scent	22	32.8	35.5
irritated skin	0	0.0	0.0
hold	24	35.8	34.5
sticky	14	20.9	21.3
didn't wash out easily	3	4.5	3.9
other	40	59.7	54.1

#21) Were you aware that PATTERNS was neither an aerosol or pump?

	#	%	wt%
yes	40	58.0	57.6
no	29	42.0	42.4

#22) How likely would you be to purchase PATTERNS at the same price as your own brand?

	#	%	wt%
very likely	18	26.1	28.7
somewhat likely	16	23.2	23.5
neutral	5	7.2	7.2
somewhat unlikely	10	14.5	11.6
definitely not	20	29.0	29.0

#22a) Why?

	#	%	wt%		#	%	wt%
easy to use	3	4.3	4.3	hair condition	6	8.7	8.2
like it	15	21.7	24.3	hold	18	26.1	22.6
container itself	11	15.9	17.2	other	34	49.3	49.7
scent	23	33.3	32.9				

#23) Would you pay more for PATTERNS than your own hair spray?

	#	%	wt%
yes	18	26.1	30.8
no	51	73.9	69.2

#24) If PATTERNS retailed for \$5.00 per container, would you say that price is...

	#	%	wt%
too high	47	69.1	70.4
just about right	20	29.4	27.2
not enough	1	1.5	2.4

TABLE 17 (continued)
QUESTIONNAIRE RESPONSES
FEMALE ADULT PUMP USERS

#25) Which type of dispenser do you like best?

	#	%	wt%
pump	14	20.3	18.0
aerosol	8	11.6	12.7
PATTERNS	47	68.1	69.2

KEY TO MULTIPLE CHOICE QUESTIONS

#7	#8, #14, #17	#15
1* Very Important	1** Excellent	1*** Much Better
2* Somewhat Important	2** Very Good	2*** Somewhat Better
3* Important	3** Good	3*** Same
4* Somewhat Unimportant	4** Poor	4*** Somewhat Worse
5* Not at all Important	5** Very Poor	5*** Much Worse

DEMOGRAPHICS

SEX	#	%	wt%
male	0	0.0	0.0
female	69	100.0	100.0

MARITAL STATUS	#	%	wt%
married	14	20.3	25.6
single	50	72.5	67.2
other	5	7.2	7.2

AGE BRACKET	#	%	wt%
18 or under	0	0.0	0.0
19 - 24	14	20.3	21.1
25 - 34	28	40.6	37.5
35 - 44	14	20.3	24.2
45 - 54	11	15.9	13.9
over 55	2	2.9	3.3

NUMBER OF PEOPLE IN HOUSEHOLD	#	%	wt%
one	23	33.3	31.7
two	16	23.2	22.0
three or more	30	43.5	46.3

HIGHEST LEVEL OF EDUCATION COMPLETED	#	%	wt%
some high school or less	1	1.4	1.3
high school graduate, no college	3	4.3	3.4
some college	25	36.2	35.4
trade/vocational school	10	14.5	17.5
college graduate	23	33.3	34.3
post graduate study	3	4.3	4.3
post graduate degree	4	5.8	3.9

POSITION IN FAMILY	#	%	wt%
one person household	26	52.0	47.1
head of family	6	12.0	12.3
spouse of head of family	11	22.0	27.0
son/daughter of head of family	7	14.0	13.6
other	19	38.0	35.7

TABLE 18
QUESTIONNAIRE RESPONSES
FEMALE TEEN PUMP USERS

#1) How long have you been using your brand of hair spray?

	#	%	wt%
less than 1 year	3	50.0	38.1
1-4 years	3	50.0	61.9
> 5 years	0	0.0	0.0

#2) What do you particularly like about your brand of hair spray?

	#	%	wt%
hold	4	80.0	74.1
scent	1	20.0	11.5
not too sticky	1	20.0	25.9
long lasting effect	1	20.0	19.5
dries quickly	0	0.0	0.0
easy to style	0	0.0	0.0
recommended by someone	0	0.0	0.0
leaves hair soft, not too stiff	2	40.0	37.4
fairly priced	0	0.0	0.0
other	0	0.0	0.0

#3) What do you particularly dislike about your brand of hair spray?

	#	%	wt%
hold	0	0.0	0.0
wet, stiff looking	2	50.0	41.8
must use alot	0	0.0	0.0
sticky	1	25.0	31.9
itchy scalp	0	0.0	0.0
too much perfume	0	0.0	0.0
scent or smell	1	25.0	26.3
poor packaging	0	0.0	0.0
cost	0	0.0	0.0
other	0	0.0	0.0

#4) What is your main reason for purchasing your brand of hair spray?

	#	%	wt%
hold	3	60.0	59.4
smell or scent	0	0.0	0.0
availability	0	0.0	0.0
advertising	0	0.0	0.0
habit	0	0.0	0.0
cost	0	0.0	0.0
recommended	1	20.0	28.1
minimal damage to hair	0	0.0	0.0
looks natural	0	0.0	0.0
other	1	20.0	12.5

#5) How many brands of hair spray do you currently use?

	#	%	wt%
one	4	66.7	55.6
two	1	16.7	21.2
three or more	1	16.7	23.2

TABLE 18 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN PUMP USERS

#6) If your brand was not on the market, which brand would you use?

	#	%	wt%
pump to pump	4	66.7	59.3
pump to aerosol	2	33.3	40.7

#7) Rate the following attributes according to importance in your decision to purchase a hair spray:

		1*	2*	3*	4*	5*
Holding power	#	6	0	0	0	0
	%	100.0	0.0	0.0	0.0	0.0
	wt%	100.0	0.0	0.0	0.0	0.0
Dispenses from any angle	#	1	2	1	2	0
	%	16.7	33.3	16.7	33.3	0.0
	wt%	10.3	40.7	21.2	27.8	0.0
Leak proof	#	5	1	0	0	0
	%	83.3	16.7	0.0	0.0	0.0
	wt%	82.5	17.5	0.0	0.0	0.0
Easily shampoos out	#	2	4	0	0	0
	%	33.3	66.7	0.0	0.0	0.0
	wt%	44.4	55.6	0.0	0.0	0.0
Explosion proof	#	3	2	1	0	0
	%	50.0	33.3	16.7	0.0	0.0
	wt%	54.8	27.8	17.5	0.0	0.0
Odor free	#	3	2	0	1	0
	%	50.0	33.3	0.0	16.7	0.0
	wt%	61.9	27.8	0.0	10.3	0.0
Safe for the environment	#	2	3	1	0	0
	%	33.3	50.0	16.7	0.0	0.0
	wt%	44.4	38.1	17.5	0.0	0.0
No overcap needed	#	0	0	0	5	1
	%	0.0	0.0	0.0	83.3	16.7
	wt%	0.0	0.0	0.0	82.5	17.5
Price	#	0	3	0	2	1
	%	0.0	50.0	0.0	33.3	16.7
	wt%	0.0	45.2	0.0	44.4	10.3
Combs out easily	#	2	2	1	1	0
	%	33.3	33.3	16.7	16.7	0.0
	wt%	40.7	27.8	21.2	10.3	0.0
Dries quickly	#	3	2	0	1	0
	%	50.0	33.3	0.0	16.7	0.0
	wt%	38.1	38.7	0.0	23.2	0.0

TABLE 18 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN PUMP USERS

#7) continued:

Feels natural	#	4	0	1	1	0
	%	66.7	0.0	16.7	16.7	0.0
	wt%	61.3	0.0	21.2	17.5	0.0
Contains no alcohol	#	0	1	2	3	0
	%	0.0	16.7	33.3	50.0	0.0
	wt%	0.0	10.3	40.7	49.0	0.0
Fragrance	#	1	2	2	1	0
	%	16.7	33.3	33.3	16.7	0.0
	wt%	10.3	31.5	34.9	23.2	0.0
Even distribution on hair	#	1	2	2	0	1
	%	16.7	33.3	33.3	0.0	16.7
	wt%	21.2	20.6	40.7	0.0	17.5
Leaves no sticky residue	#	5	1	0	0	0
	%	83.3	16.7	0.0	0.0	0.0
	wt%	82.5	17.5	0.0	0.0	0.0

#8) Rate the performance of YOUR hair spray on the following attributes:

		1**	2**	3**	4**	5**
Holding power	#	3	2	1	0	0
	%	50.0	33.3	16.7	0.0	0.0
	wt%	49.0	40.7	10.3	0.0	0.0
Dispenses from any angle	#	1	1	4	0	0
	%	16.7	16.7	66.7	0.0	0.0
	wt%	23.2	21.2	55.6	0.0	0.0
Leak proof	#	1	1	3	1	0
	%	16.7	16.7	50.0	16.7	0.0
	wt%	23.2	17.5	49.0	10.3	0.0
Easily shampoos out	#	2	3	1	0	0
	%	33.3	50.0	16.7	0.0	0.0
	wt%	40.7	38.1	21.2	0.0	0.0
Explosion proof	#	2	1	2	0	0
	%	40.0	20.0	40.0	0.0	0.0
	wt%	41.1	13.4	45.5	0.0	0.0
Odor free	#	0	2	3	1	0
	%	0.0	33.3	50.0	16.7	0.0
	wt%	0.0	33.5	49.0	17.5	0.0
Safe for the environment	#	2	1	3	0	0
	%	33.3	16.7	50.0	0.0	0.0
	wt%	33.5	10.3	56.2	0.0	0.0

TABLE 18 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN PUMP USERS

#8) continued:

No overcap needed	#	1	5	0	0	0
	%	16.7	83.3	0.0	0.0	0.0
	wt%	23.2	76.8	0.0	0.0	0.0
Price	#	2	2	1	1	0
	%	33.3	33.3	16.7	16.7	0.0
	wt%	44.4	20.6	17.5	17.5	0.0
Combs out easily	#	1	2	2	1	0
	%	16.7	33.3	33.3	16.7	0.0
	wt%	23.2	27.8	27.8	21.2	0.0
Dries quickly	#	1	1	1	3	0
	%	16.7	16.7	16.7	50.0	0.0
	wt%	10.3	23.2	17.5	49.0	0.0
Feels natural	#	1	1	0	4	0
	%	16.7	16.7	0.0	66.7	0.0
	wt%	23.2	10.3	0.0	66.5	0.0
Contains no alcohol	#	0	1	3	1	0
	%	0.0	20.0	60.0	20.0	0.0
	wt%	0.0	13.4	63.8	22.7	0.0
Fragrance	#	2	0	2	2	0
	%	33.3	0.0	33.3	33.3	0.0
	wt%	33.5	0.0	38.7	27.8	0.0
Even distribution on hair	#	2	0	4	0	0
	%	33.3	0.0	66.7	0.0	0.0
	wt%	33.5	0.0	66.5	0.0	0.0
Leaves no sticky residue	#	1	1	2	2	0
	%	16.7	16.7	33.3	33.3	0.0
	wt%	23.2	10.3	34.9	31.5	0.0

#9) How many cans of hair spray do you use each month?

	#	%	wt%
<1	2	33.3	27.8
1	1	16.7	23.2
2	0	0.0	0.0
3	2	33.3	27.8
4	1	16.7	21.2
5	0	0.0	0.0

TABLE 18 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN PUMP USERS

#10) How much do you pay for your brand of hair spray?

	#	%	wt%		#	%	wt%
less than \$1.00	0	0.0	0.0	\$5.01-\$5.50	0	0.0	0.0
\$1.01-\$1.50	0	0.0	0.0	\$5.51-\$6.00	0	0.0	0.0
\$1.51-\$2.00	0	0.0	0.0	\$6.01-\$6.50	0	0.0	0.0
\$2.01-\$2.51	2	33.3	40.7	\$6.51-\$7.00	0	0.0	0.0
\$2.51-\$3.00	3	50.0	41.9	\$7.01-\$7.50	1	16.7	17.5
\$3.01-\$3.50	0	0.0	0.0	\$7.51-\$8.00	0	0.0	0.0
\$3.51-\$4.00	0	0.0	0.0	\$8.01-\$8.50	0	0.0	0.0
\$4.01-\$4.50	0	0.0	0.0	\$8.51-\$9.00	0	0.0	0.0
\$4.51-\$5.00	0	0.0	0.0	over \$9.00	0	0.0	0.0

#10a) Who decides the brand of hair spray you use?

	#	%	wt%
self	6	100.0	100.0
mother	0	0.0	0.0
father	0	0.0	0.0
spouse	0	0.0	0.0
hairstylist	0	0.0	0.0
other	0	0.0	0.0

#12) What do you like about your alternate hair spray?

	#	%	wt%
hold	1	33.3	31.1
dispenser itself	0	0.0	0.0
even coverage	0	0.0	0.0
scent	2	66.7	68.9
leak proof	1	33.3	37.8
other	1	33.3	31.1

#13) What do you dislike about your alternate hair spray?

	#	%	wt%
leaks	1	16.7	10.3
uneven spray	0	0.0	0.0
scent	1	16.7	17.5
scalp irritation	0	0.0	0.0
dulls hair	0	0.0	0.0
hold	1	16.7	17.5
wet or sticky	1	16.7	23.2
other	5	83.3	82.5

#14) Rate your satisfaction with this alternate form on the following attributes:

	1**	2**	3**	4**	5**
Holding power	# 1	1	3	1	0
	% 16.7	16.7	50.0	16.7	0.0
	wt% 23.2	17.5	41.9	17.5	0.0

TABLE 18 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN PUMP USERS

#14) continued:

Dispenses from any angle	#	0	1	4	1	0
	%	0.0	16.7	66.7	16.7	0.0
	wt%	0.0	23.2	59.3	17.5	0.0
Leak proof	#	2	1	3	0	0
	%	33.3	16.7	50.0	0.0	0.0
	wt%	44.4	10.3	45.2	0.0	0.0
Easily shampoos out	#	1	2	2	0	1
	%	16.7	33.3	33.3	0.0	16.7
	wt%	23.2	27.8	31.5	0.0	17.5
Explosion proof	#	1	0	4	1	0
	%	16.7	0.0	66.7	16.7	0.0
	wt%	23.2	0.0	66.5	10.3	0.0
Odor free	#	0	2	2	2	0
	%	0.0	33.3	33.3	33.3	0.0
	wt%	0.0	31.5	40.7	27.8	0.0
Safe for the environment	#	1	1	3	0	1
	%	16.7	16.7	50.0	0.0	16.7
	wt%	23.2	17.5	49.0	0.0	10.3
No overcap needed	#	2	0	3	1	0
	%	33.3	0.0	50.0	16.7	0.0
	wt%	44.4	0.0	38.1	17.5	0.0
Price	#	0	0	5	1	0
	%	0.0	0.0	83.3	16.7	0.0
	wt%	0.0	0.0	82.5	17.5	0.0
Combs out easily	#	0	0	2	4	0
	%	0.0	0.0	33.3	66.7	0.0
	wt%	0.0	0.0	27.8	72.2	0.0
Dries quickly	#	0	1	3	1	1
	%	0.0	16.7	50.0	16.7	16.7
	wt%	0.0	21.2	38.1	17.5	23.2
Feels natural	#	0	0	3	2	0
	%	0.0	0.0	60.0	40.0	0.0
	wt%	0.0	0.0	49.6	50.4	0.0
Contains no alcohol	#	0	1	3	1	0
	%	0.0	20.0	60.0	20.0	0.0
	wt%	0.0	22.7	63.8	13.4	0.0
Fragrance	#	1	1	2	2	0
	%	16.7	16.7	33.3	33.3	0.0
	wt%	21.2	10.3	40.7	27.8	0.0

TABLE 18 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN PUMP USERS

#14) continued:

Even distribution on hair	#	2	1	3	0	0
	%	33.3	16.7	50.0	0.0	0.0
	wt%	44.4	10.3	45.2	0.0	0.0
Leaves no sticky residue	#	0	1	4	1	0
	%	0.0	16.7	66.7	16.7	0.0
	wt%	0.0	17.5	59.3	23.2	0.0

#15) Comparing your type of dispenser to the alternate, your type is:

		1***	2***	3***	4***	5***
Holding power	#	2	0	2	2	0
	%	33.3	0.0	33.3	33.3	0.0
	wt%	34.9	0.0	20.6	44.4	0.0
Dispenses from any angle	#	0	2	3	0	0
	%	0.0	40.0	60.0	0.0	0.0
	wt%	0.0	33.7	66.3	0.0	0.0
Leak proof	#	1	2	3	0	0
	%	16.7	33.3	50.0	0.0	0.0
	wt%	21.2	27.8	51.0	0.0	0.0
Easily shampoos out	#	1	1	3	1	0
	%	16.7	16.7	50.0	16.7	0.0
	wt%	23.2	17.5	38.1	21.2	0.0
Explosion proof	#	0	2	3	1	0
	%	0.0	33.3	50.0	16.7	0.0
	wt%	0.0	27.8	61.9	10.3	0.0
Odor free	#	1	2	3	0	0
	%	16.7	33.3	50.0	0.0	0.0
	wt%	23.2	34.9	41.9	0.0	0.0
Safe for the environment	#	0	0	5	0	1
	%	0.0	0.0	83.3	0.0	16.7
	wt%	0.0	0.0	89.7	0.0	10.3
No overcap needed	#	1	1	3	1	0
	%	16.7	16.7	50.0	16.7	0.0
	wt%	21.2	17.5	38.1	23.2	0.0
Price	#	1	1	3	1	0
	%	16.7	16.7	50.0	16.7	0.0
	wt%	23.2	10.3	45.2	21.2	0.0
Combs out easily	#	1	1	3	1	0
	%	16.7	16.7	50.0	16.7	0.0
	wt%	23.2	17.5	38.1	21.2	0.0

TABLE 18 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN PUMP USERS

#15) continued:

Dries quickly	#	1	2	3	0	0
	%	16.7	33.3	50.0	0.0	0.0
	wt%	23.2	31.5	45.2	0.0	0.0
Feels natural	#	1	0	4	1	0
	%	16.7	0.0	66.7	16.7	0.0
	wt%	23.2	0.0	59.3	17.5	0.0
Contains no alcohol	#	0	0	4	1	0
	%	0.0	0.0	80.0	20.0	0.0
	wt%	0.0	0.0	86.6	13.4	0.0
Fragrance	#	2	1	3	0	0
	%	33.3	16.7	50.0	0.0	0.0
	wt%	44.4	17.5	38.1	0.0	0.0
Even distribution on hair	#	0	2	3	1	0
	%	0.0	33.3	50.0	16.7	0.0
	wt%	0.0	38.7	38.1	23.2	0.0
Leaves no sticky residue	#	1	1	3	1	0
	%	16.7	16.7	50.0	16.7	0.0
	wt%	23.2	10.3	49.0	17.5	0.0

#16) Overall, which type of dispenser do you like best, aerosol or pump?

	#	%	wt%
aerosol	1	16.7	23.2
pump	5	83.3	76.8

#17) Rate your satisfaction with PATTERNS on the following attributes

		1**	2**	3**	4**	5**
Holding power	#	0	2	1	2	1
	%	0.0	33.3	16.7	33.3	16.7
	wt%	0.0	33.5	10.3	38.7	17.5
Dispenses from any angle	#	2	1	2	1	0
	%	33.3	16.7	33.3	16.7	0.0
	wt%	40.7	10.3	27.8	21.2	0.0
Leak proof	#	2	2	1	0	1
	%	33.3	33.3	16.7	0.0	16.7
	wt%	33.5	27.8	17.5	0.0	21.2
Easily shampoos out	#	1	2	2	1	0
	%	16.7	33.3	33.3	16.7	0.0
	wt%	23.2	27.8	27.8	21.2	0.0
Explosion proof	#	2	1	3	0	0
	%	33.3	16.7	50.0	0.0	0.0
	wt%	33.5	10.3	56.2	0.0	0.0

TABLE 18 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN PUMP USERS

#17) continued:

Odor free	#	0	1	2	1	2
	%	0.0	16.7	33.3	16.7	33.3
	wt%	0.0	10.3	44.4	17.5	27.8
Safe for the environment	#	1	2	2	1	0
	%	16.7	33.3	33.3	16.7	0.0
	wt%	23.2	27.8	27.8	21.2	0.0
No overcap needed	#	2	0	3	1	0
	%	33.3	0.0	50.0	16.7	0.0
	wt%	33.5	0.0	45.2	21.2	0.0
Price	#	0	1	2	0	0
	%	0.0	33.3	66.7	0.0	0.0
	wt%	0.0	42.4	57.6	0.0	0.0
Combs out easily	#	1	0	4	1	0
	%	16.7	0.0	66.7	16.7	0.0
	wt%	23.2	0.0	55.6	21.2	0.0
Dries quickly	#	0	1	4	0	1
	%	0.0	16.7	66.7	0.0	16.7
	wt%	0.0	10.3	68.5	0.0	21.2
Feels natural	#	1	0	3	2	0
	%	16.7	0.0	50.0	33.3	0.0
	wt%	23.2	0.0	38.1	38.7	0.0
Contains no alcohol	#	0	1	3	1	0
	%	0.0	20.0	60.0	20.0	0.0
	wt%	0.0	22.7	49.6	27.6	0.0
Fragrance	#	1	0	2	0	3
	%	16.7	0.0	33.3	0.0	50.0
	wt%	10.3	0.0	44.4	0.0	45.2
Even distribution on hair	#	1	0	4	1	0
	%	16.7	0.0	66.7	16.7	0.0
	wt%	17.5	0.0	59.3	23.2	0.0
Leaves no sticky residue	#	0	0	5	0	1
	%	0.0	0.0	83.3	0.0	16.7
	wt%	0.0	0.0	78.8	0.0	21.2

#18) Rank order of products tested for specified attributes

	own brand			alternate			PATTERNS		
#18a) holding power	#	%	wt%	#	%	wt%	#	%	wt%
liked best	3	16.7	18.7	2	11.1	11.2	1	5.6	3.4
neutral	3	16.7	14.6	2	11.1	12.9	2	11.1	9.3
liked least	0	0.0	0.0	2	11.1	9.3	3	16.7	20.6

TABLE 18 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN PUMP USERS

#18) continued:

#18b) dispenses from any angle

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	2	11.1	12.9	2	11.1	11.2	2	11.1	9.3
neutral	3	16.7	17.0	3	16.7	16.3	2	11.1	9.3
liked least	1	5.6	3.4	1	5.6	5.8	2	11.1	14.8

#18c) leak proof

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	2	11.1	10.3	3	16.7	16.1	2	11.1	6.1
neutral	2	11.1	13.0	2	11.1	8.2	2	11.1	10.3
liked least	2	11.1	6.1	1	5.6	10.3	2	11.1	19.9

#18d) easily shampoos out

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	2	11.1	14.8	1	5.6	3.4	2	11.1	9.3
neutral	3	16.7	15.1	3	16.7	16.3	2	11.1	11.2
liked least	1	5.6	3.4	2	11.1	13.6	2	11.1	12.9

#18e) explosion proof

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	2	11.1	11.2	1	5.6	7.1	2	11.1	9.3
neutral	3	16.7	18.7	3	16.7	17.0	2	11.1	9.3
liked least	1	5.6	3.4	2	11.1	9.3	2	11.1	14.8

#18f) odor free

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	4	22.2	22.8	1	5.6	7.1	1	5.6	3.4
neutral	2	11.1	10.5	4	22.2	18.5	1	5.6	7.7
liked least	0	0.0	0.0	1	5.6	7.7	4	22.2	22.2

#18g) safer for environment

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	1	5.6	7.7	1	5.6	7.1	2	11.1	9.3
neutral	4	22.2	22.2	2	11.1	9.3	3	16.7	17.0
liked least	1	5.6	3.4	3	16.7	17.0	1	5.6	7.1

#18h) no overcap needed

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	2	11.1	11.6	2	11.1	10.5	2	11.1	11.2
neutral	3	16.7	14.0	2	11.1	13.6	2	11.1	9.3
liked least	1	5.6	7.7	2	11.1	9.3	2	11.1	12.9

#18i) price

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	3	20.0	22.1	0	0.0	0.0	0	0.0	0.0
neutral	1	6.7	7.1	2	13.3	11.2	5	33.3	33.3
liked least	1	6.7	4.2	3	20.0	22.1	0	0.0	0.0

#18j) combs out easily

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	2	11.1	14.8	2	11.1	9.3	2	11.1	9.3
neutral	2	11.1	11.6	2	11.1	10.5	2	11.1	11.2
liked least	2	11.1	6.9	2	11.1	13.6	2	11.1	12.9

TABLE 18 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN PUMP USERS

#18) continued:

#18k) dries quickly

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	3	16.7	17.0	1	5.6	7.1	2	11.1	6.9
neutral	2	11.1	12.9	3	16.7	12.7	2	11.1	13.6
liked least	1	5.6	3.4	2	11.1	13.6	2	11.1	12.9

#18l) feels natural

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	3	16.7	18.3	1	5.6	5.8	3	16.7	12.7
neutral	3	16.7	15.1	2	11.1	10.5	1	5.6	7.7
liked least	0	0.0	0.0	3	16.7	17.0	2	11.1	12.9

#18m) contains no alcohol

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	0	0.0	0.0	1	6.7	9.2	2	13.3	12.1
neutral	5	33.3	33.3	2	13.3	12.1	2	13.3	12.1
liked least	0	0.0	0.0	2	13.3	12.1	1	6.7	9.2

#18n) fragrance

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	2	11.1	13.6	3	16.7	16.3	1	5.6	3.4
neutral	3	16.7	16.3	2	11.1	9.3	1	5.6	7.7
liked least	1	5.6	3.4	1	5.6	7.7	4	22.2	22.2

#18o) even distribution on hair

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	2	11.1	12.9	3	16.7	14.6	1	5.6	5.8
neutral	3	16.7	17.0	2	11.1	12.9	3	16.7	12.7
liked least	1	5.6	3.4	1	5.6	5.8	2	11.1	14.8

#18p) leaves no sticky residue

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	1	5.6	7.7	1	5.6	7.1	2	11.1	9.3
neutral	3	16.7	16.3	4	22.2	18.5	2	11.1	11.2
liked least	2	11.1	9.3	1	5.6	7.7	2	11.1	12.9

#19) Overall, which product did you like most?

	#	%	wt%
my brand	3	50.0	61.9
alternate version	1	16.7	17.5
PATTERNS	2	33.3	20.6

#19a) Why?

	#	%	wt%
hold	4	66.7	66.5
doesn't dry hair	0	0.0	0.0
dispenser	1	16.7	10.3
scent	3	50.0	45.2
other	3	50.0	54.8

TABLE 18 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN PUMP USERS

#20) Overall, which product did you like least?

	#	%	wt%
my brand	1	16.7	10.3
alternate version	2	33.3	27.8
PATTERNS	3	50.0	61.9

#20a) Why?

	#	%	wt%
dislike container	0	0.0	0.0
dispensing uneven spray	1	16.7	21.2
scent	4	66.7	66.5
irritated skin	0	0.0	0.0
hold	1	16.7	17.5
sticky	2	33.3	20.6
didn't wash out easily	0	0.0	0.0
other	4	66.7	72.2

#21) Were you aware that PATTERNS was neither an aerosol or pump?

	#	%	wt%
yes	4	66.7	59.3
no	2	33.3	40.7

#22) How likely would you be to purchase PATTERNS at the same price as your own brand?

	#	%	wt%
very likely	1	16.7	10.3
somewhat likely	1	16.7	10.3
neutral	1	16.7	17.5
somewhat unlikely	2	33.3	44.4
definitely not	1	16.7	17.5

#22a) Why?

	#	%	wt%		#	%	wt%
easy to use	0	0.0	0.0	hair condition	0	0.0	0.0
like it	0	0.0	0.0	hold	2	33.3	27.8
container itself	0	0.0	0.0	other	3	50.0	54.8
scent	3	50.0	56.2				

#23) Would you pay more for PATTERNS than your own hair spray?

	#	%	wt%
yes	2	33.3	33.5
no	4	66.7	66.5

#24) If PATTERNS retailed for \$5.00 per container, would you say that price is...

	#	%	wt%
too high	4	66.7	55.6
just about right	2	33.3	44.4
not enough	0	0.0	0.0

TABLE 18 (continued)
QUESTIONNAIRE RESPONSES
FEMALE TEEN PUMP USERS

#25) Which type of dispenser do you like best?

	#	%	wt%
pump	3	50.0	49.0
aerosol	0	0.0	0.0
PATTERNS	3	50.0	51.0

KEY TO MULTIPLE CHOICE QUESTIONS

#7	#8, #14, #17	#15
1* Very Important	1** Excellent	1*** Much Better
2* Somewhat Important	2** Very Good	2*** Somewhat Better
3* Important	3** Good	3*** Same
4* Somewhat Unimportant	4** Poor	4*** Somewhat Worse
5* Not at all Important	5** Very Poor	5*** Much Worse

DEMOGRAPHICS

SEX	#	%	wt%
male	0	0.0	0.0
female	6	100.0	100.0

MARITAL STATUS	#	%	wt%
married	0	0.0	0.0
single	6	100.0	100.0
other	0	0.0	0.0

AGE BRACKET	#	%	wt%
18 or under	6	100.0	100.0
19 - 24	0	0.0	0.0
25 - 34	0	0.0	0.0
35 - 44	0	0.0	0.0
45 - 54	0	0.0	0.0
over 55	0	0.0	0.0

NUMBER OF PEOPLE IN HOUSEHOLD	#	%	wt%
one	0	0.0	0.0
two	0	0.0	0.0
three or more	6	100.0	100.0

HIGHEST LEVEL OF EDUCATION COMPLETED	#	%	wt%
some high school or less	6	100.0	100.0
high school graduate, no college	0	0.0	0.0
some college	0	0.0	0.0
trade/vocational school	0	0.0	0.0
college graduate	0	0.0	0.0
post graduate study	0	0.0	0.0
post graduate degree	0	0.0	0.0

POSITION IN FAMILY	#	%	wt%
one person household	0	0.0	0.0
head of family	0	0.0	0.0
spouse of head of family	0	0.0	0.0
son/daughter of head of family	6	100.0	100.0
other	0	0.0	0.0

TABLE 19
QUESTIONNAIRE RESPONSES
MALE ADULT AEROSOL USERS

#1) How long have you been using your brand of hair spray?

	#	%	wt%
less than 1 year	8	36.4	35.7
1-4 years	9	40.9	39.4
> 5 years	5	22.7	25.0

#2) What do you particularly like about your brand of hair spray?

	#	%	wt%
hold	13	48.1	47.3
scent	4	14.8	13.9
not too sticky	4	14.8	17.1
long lasting effect	0	0.0	0.0
dries quickly	1	3.7	3.7
easy to style	2	7.4	7.5
recommended by someone	0	0.0	0.0
leaves hair soft, not too stiff	7	25.9	25.1
fairly priced	2	7.4	7.1
other	7	25.9	28.0

#3) What do you particularly dislike about your brand of hair spray?

	#	%	wt%
hold	1	5.6	5.8
wet, stiff looking	0	0.0	0.0
must use alot	3	16.7	16.4
sticky	0	0.0	0.0
itchy scalp	1	5.6	5.3
too much perfume	1	5.6	5.3
scent or smell	5	27.8	28.6
poor packaging	2	11.1	10.5
cost	1	5.6	5.8
other	8	44.4	44.4

#4) What is your main reason for purchasing your brand of hair spray?

	#	%	wt%
hold	6	24.0	23.8
smell or scent	1	4.0	3.6
availability	3	12.0	14.4
advertising	3	12.0	12.1
habit	4	16.0	15.0
cost	4	16.0	15.0
recommended	2	8.0	7.7
minimal damage to hair	2	8.0	8.1
looks natural	0	0.0	0.0
other	7	28.0	27.5

#5) How many brands of hair spray do you currently use?

	#	%	wt%
one	17	73.9	71.3
two	6	26.1	28.7
three or more	0	0.0	0.0

TABLE 19
QUESTIONNAIRE RESPONSES
MALE ADULT AEROSOL USERS

#6) If your brand was not on the market, which brand would you use?

	#	%	wt%
aerosol to aerosol	10	50.0	49.6
aerosol to pump	10	50.0	50.4

#7) Rate the following attributes according to importance in your decision to purchase a hair spray:

		1*	2*	3*	4*	5*
Holding power	#	20	1	5	1	0
	%	74.1	3.7	18.5	3.7	0.0
	wt%	72.0	3.7	18.4	5.8	0.0
Dispenses from any angle	#	3	4	6	8	6
	%	11.1	14.8	22.2	29.6	22.2
	wt%	10.9	15.0	21.8	28.9	23.5
Leak proof	#	11	4	5	3	3
	%	42.3	15.4	19.2	11.5	11.5
	wt%	44.3	14.8	19.1	10.9	10.9
Easily shampoos out	#	16	2	4	4	1
	%	59.3	7.4	14.8	14.8	3.7
	wt%	60.2	7.5	14.6	14.3	3.4
Explosion proof	#	9	1	5	7	4
	%	34.6	3.8	19.2	26.9	15.4
	wt%	37.2	3.5	17.9	26.5	14.8
Odor free	#	5	11	4	6	1
	%	18.5	40.7	14.8	22.2	3.7
	wt%	17.6	42.6	15.0	21.4	3.4
Safe for the environment	#	12	5	2	6	2
	%	44.4	18.5	7.4	22.2	7.4
	wt%	44.9	18.4	7.5	22.1	7.1
No overcap needed	#	2	2	8	9	6
	%	7.4	7.4	29.6	33.3	22.2
	wt%	7.5	7.1	28.9	32.6	23.9
Price	#	7	9	6	4	1
	%	25.9	33.3	22.2	14.8	3.7
	wt%	27.2	33.0	21.8	14.6	3.4
Combs out easily	#	9	6	7	3	2
	%	33.3	22.2	25.9	11.1	7.4
	wt%	35.1	21.8	25.1	10.9	7.1
Dries quickly	#	6	9	6	3	3
	%	22.2	33.3	22.2	11.1	11.1
	wt%	21.8	33.0	21.4	11.2	12.6

TABLE 19 (continued)
 QUESTIONNAIRE RESPONSES
 MALE ADULT AEROSOL USERS

#7) CONTINUED:

Feels natural	#	16	6	3	1	1
	%	59.3	22.2	11.1	3.7	3.7
	wt%	59.9	21.8	10.9	3.7	3.7
Contains no alcohol	#	5	6	6	6	4
	%	18.5	22.2	22.2	22.2	14.8
	wt%	18.0	22.1	21.4	21.8	16.7
Fragrance	#	3	8	3	5	3
	%	13.6	36.4	13.6	22.7	13.6
	wt%	13.2	38.1	13.7	22.3	12.8
Even distribution on hair	#	11	5	5	2	0
	%	47.8	21.7	21.7	8.7	0.0
	wt%	49.2	21.0	21.9	7.9	0.0
Leaves no sticky residue	#	16	4	2	1	0
	%	69.6	17.4	8.7	4.3	0.0
	wt%	70.3	17.1	8.3	4.4	0.0

#8) Rate the performance of YOUR hair spray on the following attributes:

		1**	2**	3**	4**	5**
Holding power	#	10	10	6	0	0
	%	38.5	38.5	23.1	0.0	0.0
	wt%	39.0	37.9	23.1	0.0	0.0
Dispenses from any angle	#	3	12	12	0	0
	%	11.1	44.4	44.4	0.0	0.0
	wt%	13.3	43.5	43.1	0.0	0.0
Leak proof	#	6	13	7	1	0
	%	22.2	48.1	25.9	3.7	0.0
	wt%	24.6	47.3	24.4	3.7	0.0
Easily shampoos out	#	9	13	4	0	0
	%	34.6	50.0	15.4	0.0	0.0
	wt%	36.5	49.1	14.4	0.0	0.0
Explosion proof	#	4	5	16	1	0
	%	15.4	19.2	61.5	3.8	0.0
	wt%	15.6	18.3	62.2	3.9	0.0
Odor free	#	6	5	8	8	0
	%	22.2	18.5	29.6	29.6	0.0
	wt%	21.8	20.5	28.9	28.9	0.0
Safe for the environment	#	7	6	10	1	1
	%	28.0	24.0	40.0	4.0	4.0
	wt%	27.2	22.3	42.4	4.1	4.1

TABLE 19 (continued)
QUESTIONNAIRE RESPONSES
MALE ADULT AEROSOL USERS

#8) CONTINUED:

No overcap needed	#	7	3	10	4	3
	%	25.9	11.1	37.0	14.8	11.1
	wt%	25.9	13.0	36.4	14.3	10.5
Price	#	5	7	12	2	1
	%	18.5	25.9	44.4	7.4	3.7
	wt%	18.4	28.0	42.4	7.5	3.7
Combs out easily	#	7	9	9	2	0
	%	25.9	33.3	33.3	7.4	0.0
	wt%	27.6	33.0	32.3	7.1	0.0
Dries quickly	#	8	13	5	1	0
	%	29.6	48.1	18.5	3.7	0.0
	wt%	28.9	47.6	19.7	3.7	0.0
Feels natural	#	9	7	8	3	0
	%	33.3	25.9	29.6	11.1	0.0
	wt%	35.5	24.8	28.9	10.9	0.0
Contains no alcohol	#	1	2	14	4	3
	%	4.2	8.3	58.3	16.7	12.5
	wt%	4.2	8.0	59.2	16.4	12.2
Fragrance	#	4	4	8	4	1
	%	19.0	19.0	38.1	19.0	4.8
	wt%	18.6	20.8	37.2	18.6	4.8
Even distribution on hair	#	9	9	4	1	0
	%	39.1	39.1	17.4	4.3	0.0
	wt%	40.5	38.1	17.1	4.4	0.0
Leaves no sticky residue	#	9	6	7	1	0
	%	39.1	26.1	30.4	4.3	0.0
	wt%	41.4	24.9	29.3	4.4	0.0

#9) How many cans of hair spray do you use each month?

	#	%	wt%
<1	12	54.5	52.6
1	7	31.8	33.7
2	3	13.6	13.7
3	0	0.0	0.0
4	0	0.0	0.0
5	0	0.0	0.0

TABLE 19 (continued)
QUESTIONNAIRE RESPONSES
MALE ADULT AEROSOL USERS

#10) How much do you pay for your brand of hair spray?

	#	%	wt%		#	%	wt%
less than \$1.00	0	0.0	0.0	\$5.01-\$5.50	0	0.0	0.0
\$1.01-\$1.50	2	7.4	7.1	\$5.51-\$6.00	0	0.0	0.0
\$1.51-\$2.00	1	3.7	3.4	\$6.01-\$6.50	0	0.0	0.0
\$2.01-\$2.51	2	7.4	7.1	\$6.51-\$7.00	0	0.0	0.0
\$2.51-\$3.00	9	33.3	33.4	\$7.01-\$7.50	0	0.0	0.0
\$3.01-\$3.50	5	18.5	18.7	\$7.51-\$8.00	0	0.0	0.0
\$3.51-\$4.00	5	18.5	19.7	\$8.01-\$8.50	1	3.7	3.7
\$4.01-\$4.50	0	0.0	0.0	\$8.51-\$9.00	0	0.0	0.0
\$4.51-\$5.00	2	7.4	6.8	over \$9.00	0	0.0	0.0

#10a) Who decides the brand of hair spray you use?

	#	%	wt%
self	23	85.2	85.4
mother	1	3.7	3.7
father	0	0.0	0.0
spouse	3	11.1	10.9
hairstylist	0	0.0	0.0
other	0	0.0	0.0

#12) What do you like about your alternate hair spray?

	#	%	wt%
hold	7	31.8	30.7
dispenser itself	3	13.6	13.3
even coverage	0	0.0	0.0
scent	4	18.2	18.3
leak proof	0	0.0	0.0
other	16	72.7	73.0

#13) What do you dislike about your alternate hair spray?

	#	%	wt%
leaks	2	10.0	10.3
uneven spray	6	30.0	29.9
scent	1	5.0	4.6
scalp irritation	0	0.0	0.0
dulls hair	0	0.0	0.0
hold	2	10.0	10.3
wet or sticky	5	25.0	25.8
other	9	45.0	44.3

#14) Rate your satisfaction with this alternate form on the following attributes:

	1**	2**	3**	4**	5**
Holding power	# 11	7	8	1	0
	% 40.7	25.9	29.6	3.7	0.0
	wt% 41.5	25.5	29.3	3.7	0.0

TABLE 19 (continued)
QUESTIONNAIRE RESPONSES
MALE ADULT AEROSOL USERS

#14) CONTINUED:

Dispenses from any angle	#	5	6	12	4	0
	%	18.5	22.2	44.4	14.8	0.0
	wt%	19.4	21.4	44.2	15.0	0.0
Leak proof	#	4	7	11	5	0
	%	14.8	25.9	40.7	18.5	0.0
	wt%	13.5	27.6	40.1	18.7	0.0
Easily shampoos out	#	7	12	5	2	0
	%	26.9	46.2	19.2	7.7	0.0
	wt%	27.5	45.2	19.5	7.8	0.0
Explosion proof	#	7	7	8	3	0
	%	28.0	28.0	32.0	12.0	0.0
	wt%	29.7	27.1	31.9	11.3	0.0
Odor free	#	4	6	11	5	0
	%	15.4	23.1	42.3	19.2	0.0
	wt%	16.9	22.5	41.5	19.0	0.0
Safe for the environment	#	9	10	7	1	0
	%	33.3	37.0	25.9	3.7	0.0
	wt%	34.7	36.4	25.5	3.4	0.0
No overcap needed	#	4	7	11	4	0
	%	15.4	26.9	42.3	15.4	0.0
	wt%	17.4	26.5	41.3	14.8	0.0
Price	#	1	4	16	2	0
	%	4.3	17.4	69.6	8.7	0.0
	wt%	4.4	20.0	67.2	8.4	0.0
Combs out easily	#	3	11	10	3	0
	%	11.1	40.7	37.0	11.1	0.0
	wt%	13.0	40.5	35.6	10.9	0.0
Dries quickly	#	6	16	3	1	0
	%	23.1	61.5	11.5	3.8	0.0
	wt%	24.7	60.2	11.3	3.9	0.0
Feels natural	#	5	8	6	5	3
	%	18.5	29.6	22.2	18.5	11.1
	wt%	20.1	29.3	21.8	17.6	11.2
Contains no alcohol	#	2	5	10	6	0
	%	8.7	21.7	43.5	26.1	0.0
	wt%	11.2	20.6	42.9	25.4	0.0
Fragrance	#	3	5	14	4	0
	%	11.5	19.2	53.8	15.4	0.0
	wt%	13.5	18.3	53.0	15.2	0.0

TABLE 19 (continued)
QUESTIONNAIRE RESPONSES
MALE ADULT AEROSOL USERS

#14) CONTINUED:

Even distribution on hair	#	4	5	12	3	3
	%	14.8	18.5	44.4	11.1	11.1
	wt%	16.4	17.6	43.9	10.9	11.2
Leaves no sticky residue	#	4	6	7	7	3
	%	14.8	22.2	25.9	25.9	11.1
	wt%	16.7	21.4	25.1	25.5	11.2

#15) Comparing your type of dispenser to the alternate, your type is:

		1***	2***	3***	4***	5***
Holding power	#	5	3	13	6	0
	%	18.5	11.1	48.1	22.2	0.0
	wt%	20.5	10.9	46.5	22.1	0.0
Dispenses from any angle	#	3	9	11	3	1
	%	11.1	33.3	40.7	11.1	3.7
	wt%	13.3	32.3	40.1	10.9	3.4
Leak proof	#	5	3	15	2	2
	%	18.5	11.1	55.6	7.4	7.4
	wt%	20.8	10.9	53.7	7.5	7.1
Easily shampoos out	#	2	5	16	2	0
	%	8.0	20.0	64.0	8.0	0.0
	wt%	10.3	19.4	62.2	8.1	0.0
Explosion proof	#	2	2	14	5	3
	%	7.7	7.7	53.8	19.2	11.5
	wt%	9.6	7.8	52.2	19.1	11.3
Odor free	#	2	4	17	4	0
	%	7.4	14.8	63.0	14.8	0.0
	wt%	9.6	14.6	61.2	14.6	0.0
Safe for the environment	#	3	2	14	4	2
	%	12.0	8.0	56.0	16.0	8.0
	wt%	13.6	8.1	54.1	16.1	8.1
No overcap needed	#	2	5	14	3	0
	%	8.3	20.8	58.3	12.5	0.0
	wt%	10.7	20.5	56.6	12.2	0.0
Price	#	0	7	12	5	0
	%	0.0	29.2	50.0	20.8	0.0
	wt%	0.0	31.0	49.2	19.8	0.0
Combs out easily	#	2	6	11	4	1
	%	8.3	25.0	45.8	16.7	4.2
	wt%	10.7	24.7	44.0	16.8	3.8

TABLE 19 (continued)
QUESTIONNAIRE RESPONSES
MALE ADULT AEROSOL USERS

#15) CONTINUED:

Dries quickly	#	4	7	11	5	0
	%	14.8	25.9	40.7	18.5	0.0
	wt%	16.7	25.5	39.4	18.4	0.0
Feels natural	#	6	6	8	6	1
	%	22.2	22.2	29.6	22.2	3.7
	wt%	23.9	21.8	28.9	21.8	3.7
Contains no alcohol	#	1	4	15	3	0
	%	4.3	17.4	65.2	13.0	0.0
	wt%	4.4	19.5	63.4	12.7	0.0
Fragrance	#	2	3	11	6	0
	%	9.1	13.6	50.0	27.3	0.0
	wt%	11.6	12.3	49.2	26.9	0.0
Even distribution on hair	#	9	4	10	3	1
	%	33.3	14.8	37.0	11.1	3.7
	wt%	35.1	14.3	36.4	10.9	3.4
Leaves no sticky residue	#	5	7	7	5	3
	%	18.5	25.9	25.9	18.5	11.1
	wt%	18.0	27.6	24.8	18.7	10.9

#16) Overall, which type of dispenser do you like best, aerosol or pump?

	#	%	wt%
aerosol	14	51.9	51.4
pump	13	48.1	48.6

#17) Rate your satisfaction with PATTERNS on the following attributes

		1**	2**	3**	4**	5**
Holding power	#	8	15	4	0	0
	%	29.6	55.6	14.8	0.0	0.0
	wt%	31.3	54.0	14.6	0.0	0.0
Dispenses from any angle	#	5	13	7	1	0
	%	19.2	50.0	26.9	3.8	0.0
	wt%	19.1	50.5	26.9	3.5	0.0
Leak proof	#	5	13	8	1	0
	%	18.5	48.1	29.6	3.7	0.0
	wt%	20.5	47.3	28.5	3.7	0.0
Easily shampoos out	#	5	14	6	2	0
	%	18.5	51.9	22.2	7.4	0.0
	wt%	19.7	51.4	21.4	7.5	0.0
Explosion proof	#	2	5	12	1	0
	%	10.0	25.0	60.0	5.0	0.0
	wt%	10.0	24.5	60.9	4.5	0.0

TABLE 19 (continued)
QUESTIONNAIRE RESPONSES
MALE ADULT AEROSOL USERS

#17) CONTINUED:

Odor free	#	2	8	6	4	6
	%	7.7	30.8	23.1	15.4	23.1
	wt%	7.4	33.2	22.9	14.4	22.1
Safe for the environment	#	4	7	10	2	0
	%	17.4	30.4	43.5	8.7	0.0
	wt%	17.1	29.9	44.6	8.4	0.0
No overcap needed	#	3	11	9	3	1
	%	11.1	40.7	33.3	11.1	3.7
	wt%	10.9	42.6	32.6	10.1	3.7
Price	#	0	1	8	0	0
	%	0.0	11.1	88.9	0.0	0.0
	wt%	0.0	10.7	89.3	0.0	0.0
Combs out easily	#	5	12	5	4	1
	%	18.5	44.4	18.5	14.8	3.7
	wt%	20.5	43.1	18.0	14.6	3.7
Dries quickly	#	5	10	8	4	0
	%	18.5	37.0	29.6	14.8	0.0
	wt%	18.0	38.5	28.9	14.6	0.0
Feels natural	#	6	7	7	4	3
	%	22.2	25.9	25.9	14.8	11.1
	wt%	21.0	28.0	25.9	13.9	11.2
Contains no alcohol	#	0	4	10	3	1
	%	0.0	22.2	55.6	16.7	5.6
	wt%	0.0	22.7	56.2	15.4	5.7
Fragrance	#	4	7	6	5	4
	%	15.4	26.9	23.1	19.2	15.4
	wt%	14.8	29.1	22.6	18.7	14.8
Even distribution on hair	#	5	14	3	4	1
	%	18.5	51.9	11.1	14.8	3.7
	wt%	18.0	52.7	10.9	15.0	3.4
Leaves no sticky residue	#	6	8	5	3	5
	%	22.2	29.6	18.5	11.1	18.5
	wt%	21.4	31.3	18.4	10.5	18.4

#18) Rank order of products tested for specified attributes

own brand alternate PATTERNS

#18a) holding power

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	11	14.5	15.0	4	5.3	5.1	9	11.8	11.6
neutral	11	14.5	13.9	13	17.1	17.7	6	7.9	8.5
liked least	4	5.3	5.3	8	10.5	10.1	10	13.2	12.8

TABLE 19 (continued)
QUESTIONNAIRE RESPONSES
MALE ADULT AEROSOL USERS

#18) CONTINUED:

#18b) dispenses from any angle

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	5	6.6	6.5	2	2.6	2.5	12	15.8	15.5
neutral	15	19.7	19.8	15	19.7	20.0	9	11.8	12.3
liked least	5	6.6	6.5	9	11.8	11.7	4	5.3	5.1

#18c) leak proof

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	10	13.2	14.2	2	2.6	3.4	11	14.5	14.4
neutral	9	11.8	11.7	12	15.8	15.7	12	15.8	16.4
liked least	6	7.9	6.7	11	14.5	13.4	3	3.9	4.1

#18d) easily shampoos out

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	10	13.3	13.9	3	4.0	4.7	9	12.0	11.8
neutral	9	12.0	11.8	14	18.7	18.2	11	14.7	15.0
liked least	6	8.0	7.7	8	10.7	10.4	5	6.7	6.6

#18e) explosion proof

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	7	10.6	11.2	6	9.1	9.5	9	13.6	13.6
neutral	6	9.1	8.7	13	19.7	19.5	9	13.6	14.0
liked least	9	13.6	13.4	3	4.5	4.3	4	6.1	5.8

#18f) odor free

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	14	18.4	18.6	7	9.2	9.7	4	5.3	5.2
neutral	9	11.8	11.7	14	18.4	18.0	8	10.5	11.1
liked least	3	3.9	3.9	4	5.3	5.2	13	17.1	16.5

#18g) safer for environment

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	6	8.0	7.8	8	10.7	11.0	9	12.0	11.9
neutral	10	13.3	13.6	15	20.0	19.9	9	12.0	12.3
liked least	9	12.0	11.9	3	4.0	3.8	6	8.0	7.8

#18h) no overcap needed

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	6	8.5	9.2	2	2.8	3.6	10	14.1	13.7
neutral	13	18.3	17.6	16	22.5	21.9	9	12.7	13.3
liked least	5	7.0	7.0	6	8.5	8.3	4	5.6	5.4

#18i) price

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	9	15.5	16.3	6	10.3	10.3	3	5.2	4.9
neutral	6	10.3	9.6	8	13.8	13.6	10	17.2	17.7
liked least	6	10.3	10.3	5	8.6	9.0	5	8.6	8.5

#18j) combs out easily

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	9	12.3	13.1	5	6.8	6.5	9	12.3	12.1
neutral	8	11.0	10.4	13	17.8	18.4	10	13.7	14.0
liked least	7	9.6	9.3	7	9.6	9.3	5	6.8	6.8

TABLE 19 (continued)
QUESTIONNAIRE RESPONSES
MALE ADULT AEROSOL USERS

#18) CONTINUED:

#18k) dries quickly

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	11	15.1	15.6	7	9.6	9.2	7	9.6	9.4
neutral	9	12.3	11.8	9	12.3	13.0	11	15.1	15.5
liked least	4	5.5	5.4	8	11.0	10.7	7	9.6	9.3

#18l) feels natural

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	8	11.1	11.9	5	6.9	6.8	9	12.5	12.0
neutral	10	13.9	13.4	11	15.3	15.7	9	12.5	13.2
liked least	6	8.3	8.0	8	11.1	10.8	6	8.3	8.2

#18m) contains no alcohol

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	4	8.2	8.0	1	2.0	1.8	5	10.2	10.0
neutral	8	16.3	17.0	10	20.4	21.0	6	12.2	13.0
liked least	5	10.2	9.6	5	10.2	9.8	5	10.2	9.6

#18n) fragrance

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	10	13.0	13.4	9	11.7	12.1	7	9.1	8.9
neutral	9	11.7	11.5	13	16.9	16.5	6	7.8	8.5
liked least	6	7.8	7.6	4	5.2	5.3	13	16.9	16.3

#18o) even distribution on hair

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	13	17.3	17.9	3	4.0	4.5	9	12.0	11.8
neutral	9	12.0	11.5	11	14.7	14.6	10	13.3	13.7
liked least	3	4.0	3.9	11	14.7	14.2	6	8.0	7.8

#18p) leaves no sticky residue

	#	%	wt%	#	%	wt%	#	%	wt%
liked best	10	13.3	13.7	3	4.0	4.5	10	13.3	13.2
neutral	10	13.3	13.1	16	21.3	21.0	7	9.3	9.7
liked least	5	6.7	6.5	6	8.0	7.8	8	10.7	10.4

#19) Overall, which product did you like most?

	#	%	wt%
my brand	12	44.4	45.6
alternate version	6	22.2	21.4
PATTERNS	9	33.3	33.0

#19a) Why?

	#	%	wt%
hold	6	25.0	24.0
doesn't dry hair	0	0.0	0.0
dispenser	4	16.7	16.4
scent	9	37.5	37.0
other	19	79.2	79.4

TABLE 19 (continued)
QUESTIONNAIRE RESPONSES
MALE ADULT AEROSOL USERS

#20) Overall, which product did you like least?

	#	%	wt%
my brand	6	22.2	21.4
alternate version	12	44.4	46.0
PATTERNS	9	33.3	32.6

#20a) Why?

	#	%	wt%
dislike container	4	16.0	16.2
dispensing uneven spray	4	16.0	15.8
scent	6	24.0	22.7
irritated skin	1	4.0	3.7
hold	2	8.0	8.1
sticky	4	16.0	15.0
didn't wash out easily	0	0.0	0.0
other	19	76.0	75.7

#21) Were you aware that PATTERNS was neither an aerosol or pump?

	#	%	wt%
yes	17	65.4	63.9
no	9	34.6	36.1

#22) How likely would you be to purchase PATTERNS at the same price as your own brand?

	#	%	wt%
very likely	9	33.3	33.0
somewhat likely	3	11.1	10.9
neutral	2	7.4	7.1
somewhat unlikely	4	14.8	16.7
definitely not	9	33.3	32.3

#22a) Why?

	#	%	wt%		#	%	wt%
easy to use	2	7.4	7.5	hair condition	3	11.1	10.1
like it	4	14.8	14.6	hold	3	11.1	10.9
container itself	1	3.7	3.4	other	12	44.4	45.2
scent	8	29.6	28.2				

#23) Would you pay more for PATTERNS than your own hair spray?

	#	%	wt%
yes	7	25.9	25.5
no	20	74.1	74.5

#24) If PATTERNS retailed for \$5.00 per container, would you say that price is...

	#	%	wt%
too high	21	80.8	79.2
just about right	5	19.2	20.8
not enough	0	0.0	0.0

TABLE 19 (continued)
QUESTIONNAIRE RESPONSES
MALE ADULT AEROSOL USERS

#25) Which type of dispenser do you like best?

	#	%	wt%
pump	5	19.2	18.3
aerosol	5	19.2	19.4
PATTERNS	16	61.5	62.3

KEY TO MULTIPLE CHOICE QUESTIONS

#7	#8, #14, #17	#15
1* Very Important	1** Excellent	1*** Much Better
2* Somewhat Important	2** Very Good	2*** Somewhat Better
3* Important	3** Good	3*** Same
4* Somewhat Unimportant	4** Poor	4*** Somewhat Worse
5* Not at all Important	5** Very Poor	5*** Much Worse

DEMOGRAPHICS

SEX	#	%	wt%
male	27	100.0	100.0
female	0	0.0	0.0

MARITAL STATUS	#	%	wt%
married	15	57.7	58.5
single	11	42.3	41.5
other	0	0.0	0.0

AGE BRACKET	#	%	wt%
18 or under	0	0.0	0.0
19 - 24	4	14.8	14.6
25 - 34	10	37.0	36.4
35 - 44	5	18.5	20.5
45 - 54	4	14.8	13.9
over 55	4	14.8	14.6

NUMBER OF PEOPLE IN HOUSEHOLD	#	%	wt%
one	3	12.0	11.4
two	11	44.0	46.0
three or more	11	44.0	42.6

HIGHEST LEVEL OF EDUCATION COMPLETED	#	%	wt%
some high school or less	0	0.0	0.0
high school graduate, no college	0	0.0	0.0
some college	9	33.3	33.0
trade/vocational school	1	3.7	3.7
college graduate	11	40.7	41.5
post graduate study	1	3.7	3.7
post graduate degree	5	18.5	18.0

POSITION IN FAMILY	#	%	wt%
one person household	6	27.3	25.9
head of family	15	68.2	69.5
spouse of head of family	0	0.0	0.0
son/daughter of head of family	1	4.5	4.6
other	5	22.7	23.1